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=> fil reg
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STRUCTURE FILE UPDATES:   17 MAY 2010  HIGHEST RN 1224322-63-7
DICTIONARY FILE UPDATES:  17 MAY 2010  HIGHEST RN 1224322-63-7

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=> d que
L2            1 SEA FILE=REGISTRY SPE=ON  ABB=ON  PLU=ON  7439-98-7/RN
L3            1 SEA FILE=REGISTRY SPE=ON  ABB=ON  PLU=ON  7440-50-8/RN
L4            1 SEA FILE=REGISTRY SPE=ON  ABB=ON  PLU=ON  12668-36-9/RN
L5          761 SEA FILE=REGISTRY SPE=ON  ABB=ON  PLU=ON  CU.SN/MF
L7          327 SEA FILE=REGISTRY SPE=ON  ABB=ON  PLU=ON  L5 AND 1-13
                SN/MAC
L8         1690 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L7
L9       140963 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L2
L10      628571 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L3
L11             QUE  SPE=ON  ABB=ON  PLU=ON  SOLDERING? OR WELDING? OR BR
                AZING?
L12           71 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L8 AND L11
L13           56 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L12 AND (1840-2005
                )/PRY,AY,PY
L14         2129 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L4
L15          193 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L14 AND L11
L16            5 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L15 AND L9 AND
                L10
L17        20277 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  "ELECTRONIC
                PACKAGES"+PFT,NT/CT
L18         6960 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  "HEAT SINKS"+PFT,N
                T/CT
L19            1 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L13 AND (L17 OR
                L18)
L20            0 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L13 AND HEAT
                SINK?
L21            1 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L13 AND ELECTRONIC
                 PACKAG?
L22             QUE  SPE=ON  ABB=ON  PLU=ON  FILM? OR THINFILM? OR LAYER?
                 OR OVERLAY? OR OVERLAID? OR LAMIN? OR LAMEL? OR (MULTILA
                YER?) OR SHEET? OR LEAF? OR FOIL? OR COAT? OR TOPCOAT? OR
                 OVERCOAT? OR VENEER? OR SHEATH? OR COVER? OR ENVELOP? OR
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		ENCAS? OR ENWRAP? OR OVERSPREAD?				
L23	28	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L13 AND L22	
L24	61	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L13 OR L16 OR (L19 OR L20 OR L21) OR L23	
L25	15	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L24 AND ELECTRIC?/SC,SX	
L26	127	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L15 AND L22	
L27	82	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L26 AND (1840-2005)/PRY,AY,PY	
L28	60	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L27 AND ELECTRIC?/SC,SX	
L29	60	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L28 AND L22	
L30	15	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L29 AND (L17 OR L18)	
L31	3	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L30 AND HEAT SINK?	
L32	15	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	(L30 OR L31)	
L33	29	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L25 OR L32	
L37	20970	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	SOLDERING+PFT,NT/CT	
L38	15	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L8 AND L37	
L39	82910	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	WELDING+PFT,NT/CT	
L40	27	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L8 AND L39	
L41	42	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L38 OR L40	
L42	35	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L41 AND (1840-2005)/PRY,AY,PY	
L43	7	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L42 AND ELECTRIC?/SC,SX	
L44	29	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L33 OR L43	
L45	1	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L42 AND ELECTRONIC (2A)PACKAG?	
L46	29	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L44 OR L45	
L47	19	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L42 AND PROC/RL	
L48	44	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L46 OR L47	
L49	31	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L48 AND L22	
L50	44	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L48 OR L49	
L51	23	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L50 AND (L9 OR L10)	
L52	44	SEA FILE=HCAPLUS SPE=ON	ABB=ON	PLU=ON	L50 OR L51	

=> fil hcap
FILE 'HCAPLUS' ENTERED AT 13:46:52 ON 18 MAY 2010
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FILE COVERS 1907 - 18 May 2010 VOL 152 ISS 21

FILE LAST UPDATED: 17 May 2010 (20100517/ED)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Apr 2010
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Feb 2010

HCAplus now includes complete International Patent Classification (IPC) reclassification data for the second quarter of 2010.

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d 152 1-44 ibib ed abs hitstr hitind

L52 ANSWER 1 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2008:1301449 HCAPLUS Full-text
DOCUMENT NUMBER: 149:522876
TITLE: Method for bonding electronic components finished with electroless NiXP for preventing brittle fracture of solder joints
INVENTOR(S): Yu, Jin; Jang, Dong-Min; Jee, Young-Kun
PATENT ASSIGNEE(S): Korea Advanced Institute of Science and Technology, S. Korea
SOURCE: U.S. Pat. Appl. Publ., 8 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20080265006	A1	20081030	US 2007-878173	20070720
KR 2008096264	A	20081030	KR 2007-41498	20070427
KR 876646	B1	20090109		
JP 2008285752	A	20081127	JP 2008-111954	20080423
PRIORITY APPLN. INFO.:			KR 2007-41498 A	20070427

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
ED Entered STN: 30 Oct 2008
AB A method for bonding electronic components finished with electroless NiXP layer for preventing a brittle solder joint fracture is provided with the steps comprising: forming an electroless NiXP metal layer on a metal deposition of electronic components, wherein X is selected from the group consisting of W, Mo, Co, Ti, Zr, Zn, V, Cr, Fe, Nb, Re, Mn, Tl and Cu; and reflowing a Pb-free solder on the electroless NiXP layer to be bonded. X element was suppressed the formation of Ni3P, Ni3SnP intermetallic compound and prevented the spalling behavior of Ni3Sn4. Therefore, solder joint reliability can be improved significantly.
IT 7439-98-7D, Molybdenum, salts 7440-50-8D, Copper, salts
(bonding electronic components finished with electroless nickel-phosphorus-metal alloy for preventing brittle fracture of solder joints)
RN 7439-98-7 HCAPLUS
CN Molybdenum (CA INDEX NAME)

Mo

RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

Cu

IT 12668-36-9
(bonding electronic components finished with electroless nickel-phosphorus-metal alloy for preventing brittle fracture of solder joints)
RN 12668-36-9 HCAPLUS
CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

IT 7439-98-7, Molybdenum, uses 7440-50-8, Copper, uses
(nickel-phosphorus alloy component; bonding electronic components finished with electroless nickel-phosphorus-metal alloy for preventing brittle fracture of solder joints)
RN 7439-98-7 HCAPLUS
CN Molybdenum (CA INDEX NAME)

Mo

RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

Cu

INCL 228203000
CC 76-2 (Electric Phenomena)
Section cross-reference(s): 48, 56
IT Coating process
Electronic packages
Printed circuit boards
Semiconductor devices
Soldering
Solders

Wetting agents
(bonding electronic components finished with electroless nickel-phosphorus-metal alloy for preventing brittle fracture of solder joints)
IT Coating process
(electroless; bonding electronic components finished with electroless nickel-phosphorus-metal alloy for preventing brittle fracture of solder joints)
IT Coating materials
(oxidation-resistant; bonding electronic components finished with electroless nickel-phosphorus-metal alloy for preventing brittle fracture of solder joints)
IT Soldering
(reflow; bonding electronic components finished with electroless nickel-phosphorus-metal alloy for preventing brittle fracture of solder joints)
IT 7439-89-6D, Iron, salts 7439-96-5D, Manganese, salts 7439-98-7D, Molybdenum, salts 7440-03-1D, Niobium, salts 7440-15-5D, Rhenium, salts 7440-28-0D, Thallium, salts 7440-32-6D, Titanium, salts 7440-33-7D, Tungsten, salts 7440-47-3D, Chromium, salts 7440-48-4D, Cobalt, salts 7440-50-8D, Copper, salts 7440-62-2D, Vanadium, salts 7440-66-6D, Zinc, salts 7440-67-7D, Zirconium, salts
(bonding electronic components finished with electroless nickel-phosphorus-metal alloy for preventing brittle fracture of solder joints)
IT 7440-05-3, Palladium, processes 7440-57-5, Gold, processes 11125-88-5 11144-61-9 11149-64-7 12668-36-9 12713-30-3 53024-37-6 63807-21-6 80476-08-0 81424-86-4 108856-99-1 519169-19-8 538374-77-5 680610-24-6, Beryllium, silver, tin
(bonding electronic components finished with electroless nickel-phosphorus-metal alloy for preventing brittle fracture of solder joints)
IT 7439-89-6, Iron, uses 7439-96-5, Manganese, uses 7439-98-7, Molybdenum, uses 7440-03-1, Niobium, uses 7440-15-5, Rhenium, uses 7440-28-0, Thallium, uses 7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses 7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-62-2, Vanadium, uses 7440-66-6, Zinc, uses 7440-67-7, Zirconium, uses
(nickel-phosphorus alloy component; bonding electronic components finished with electroless nickel-phosphorus-metal alloy for preventing brittle fracture of solder joints)

L52 ANSWER 2 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2007:1114883 HCAPLUS Full-text
DOCUMENT NUMBER: 147:396829
TITLE: Multilayer laminated probe pin and probe card bonded with lead-free solders
INVENTOR(S): Yamamoto, Shinichi
PATENT ASSIGNEE(S): Toshiba Corp., Japan; Toshiba Materials Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 11pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

JP 2007256078 A 20071004 JP 2006-80848 20060323
PRIORITY APPLN. INFO.: JP 2006-80848 20060323

ED Entered STN: 04 Oct 2007
AB The multilayer laminated probe pin comprises (A) a center member coated with (B) a dielec. layer and (C) an elec. conductive metal layer having surface roughness (Ra) ≤30 μm and (D) bearing an elec. conductive thin film at least on a part of C, preferably, on a part for bonding with a probe card. Preferably, A comprises a metallic material based on ≥1 kinds selected from W, Mo, Re, Ta, Nb, Au, Ag, Pt, Ni, Co, and Cu. Preferably, D comprises a metallic material based on ≥1 kinds Sn, Au, Ag, Pt, Ni, and Cu. Preferably, B is bonded with C by caulking, epoxy fusing, shrink fitting, or brazing. Preferably, D is deposited by plating.
IT 12668-36-9
(Pb-free solder; multilayer laminated probe pin and probe card bonded with lead-free solders)
RN 12668-36-9 HCAPLUS
CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

IT 7439-98-7, Molybdenum, uses 7440-50-8, Copper, uses
(elec. conductive layer; multilayer laminated probe pin and probe card bonded with lead-free solders)
RN 7439-98-7 HCAPLUS
CN Molybdenum (CA INDEX NAME)

Mo

RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

Cu

CC 76-14 (Electric Phenomena)
ST elec conductive metal layer probe pin; multilayer laminated probe pin probe card lead free solder
IT Epoxy resins, uses
(adhesive; multilayer laminated probe pin and probe card bonded with lead-free solders)
IT Solders
(lead-free; multilayer laminated probe pin and probe card bonded with lead-free solders)
IT 12668-36-9
(Pb-free solder; multilayer laminated probe pin

and probe card bonded with lead-free solders)
IT 11125-21-6
(center member; multilayer laminated probe pin and probe card bonded with lead-free solders)
IT 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-03-1, Niobium, uses 7440-06-4, Platinum, uses 7440-15-5, Rhenium, uses 7440-22-4, Silver, uses 7440-25-7, Tantalum, uses 7440-31-5, Tin, uses 7440-33-7, Tungsten, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 12597-71-6, Brass, uses
(elec. conductive layer; multilayer laminated probe pin and probe card bonded with lead-free solders)

L52 ANSWER 3 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2007:929899 HCAPLUS Full-text
DOCUMENT NUMBER: 147:267044
TITLE: Hermetically sealing a package to include a barrier metal and a highly accurate sealing frame to give packages with excellent seals and bonds
INVENTOR(S): Murata, Koji; Iwamoto, Takashi; Horiguchi, Hiroki; Kubo, Ryuichi; Fujii, Hidetoshi; Aizawa, Naoko
PATENT ASSIGNEE(S): Murata Manufacturing Co., Ltd., Japan
SOURCE: U.S., 27pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 7259032	B2	20070821	US 2003-713253 <--	20031117
PRIORITY APPLN. INFO.:			JP 2002-341763 <--	A 20021126
			JP 2003-344041 <--	A 20031002

ED Entered STN: 22 Aug 2007
AB A method for manufacturing an electronic device includes the steps of forming a 1st resist pattern on a primary surface of a SAW element, the 1st resist pattern having openings at positions corresponding to those at which bumps and a sealing frame are to be formed, sequentially forming metals over the 1st resist pattern, the metals being formed into adhesion layers, barrier metal layers, and solder layers, removing the 1st resist pattern on the SAW element such that the bumps and the sealing frame are simultaneously formed. When the bumps and the sealing frame of the SAW element are bonded to bond electrodes of the bond substrate, the solder layers are melted and alloyed by heating.
IT 7440-50-8, Copper, processes 12668-36-9
(hermetically sealing package to include barrier metal and highly accurate sealing frame to give packages with excellent seals and bonds)
RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

Cu

RN 12668-36-9 HCAPLUS
CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

INCL 438026000; 257684000; 257-E21.513
CC 76-3 (Electric Phenomena)
Section cross-reference(s): 48, 56
IT Acoustic devices
Adhesive films
Alloying
Bump contacts
Diffusion barrier
Electronic packages
Electronic packaging process
Heat treatment
Joining
Lithography
Soldering
Surface acoustic wave devices
(hermetically sealing package to include barrier metal and highly accurate sealing frame to give packages with excellent seals and bonds)
IT 7440-02-0, Nickel, processes 7440-22-4, Silver, processes 7440-32-6, Titanium, processes **7440-50-8**, Copper, processes 7440-57-5, Gold, processes 11110-87-5 11124-13-3 11125-88-5 11144-61-9 12019-61-3 **12668-36-9** 12713-30-3 12785-33-0 37255-79-1 39460-91-8 51603-53-3 71818-44-5
(hermetically sealing package to include barrier metal and highly accurate sealing frame to give packages with excellent seals and bonds)
IT 7727-37-9, Nitrogen, uses 7782-44-7, Oxygen, uses
(soldering atmospheric; hermetically sealing package to include barrier metal and highly accurate sealing frame to give packages with excellent seals and bonds)
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 4 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2007:17701 HCAPLUS Full-text
DOCUMENT NUMBER: 146:91611
TITLE: Ball-limiting metallurgies, solder bump compositions used therewith, packages assembled thereby, and methods of assembling same
INVENTOR(S): Hua, Fay; Wu, Albert T.; Jeng, Kevin; Seshan, Krishna
PATENT ASSIGNEE(S): Intel Corporation, USA
SOURCE: U.S. Pat. Appl. Publ., 18 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20070004086	A1	20070104	US 2005-173238 <--	20050630
US 7314819	B2	20080101		
US 20070284741	A1	20071213	US 2007-840269 <--	20070817
PRIORITY APPLN. INFO.:			US 2005-173238 <--	A3 20050630

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

ED Entered STN: 05 Jan 2007

AB The invention relates to elec. connection technol. In particular, it relates to a ball- limiting metallurgy, a solder-bump metallurgy, and a package achieved thereby. A ball-limiting metallurgy (BLM) stack is provided for an elec. device. The BLM stack resists Sn migration toward the metalization of the device. A solder system is also provided that includes a eutectic-Pb solder on a substrate that is mated to a high-Pb solder, and that withstands higher temperature reflows and other higher temperature processes.

IT 7440-50-8, Copper, uses
(die layer coupled to a solder bump)

RN 7440-50-8 HCAPLUS

CN Copper (CA INDEX NAME)

IT 12668-36-9
(intermetallic upper layer below and on metal layer of electronic package)

RN 12668-36-9 HCAPLUS

CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

INCL 438108000

CC 76-3 (Electric Phenomena)

ST ball limiting metallurgy solder bump laminated metal layer

IT Laminated materials
(Al/refractory metal/V die metallurgy for forming solder bumps)

IT Bump contacts
Electronic packages
Electronic packaging process
(ball-limiting metallurgies, solder bump compns. used therewith, packages assembled thereby, and methods of assembling same)

IT Refractory metals
(laminated layer in ball-limiting metallurgies)

IT Soldering
(reflow; ball-limiting metallurgies, solder bump compns. used therewith, packages assembled thereby, and methods of assembling same)

IT 7440-50-8, Copper, uses

(die layer coupled to a solder bump)
IT 12668-36-9
(intermetallic upper layer below and on metal layer of electronic package)
IT 7429-90-5, Aluminum, uses
(laminated layer in ball-limiting metallurgies)
IT 7440-62-2, Vanadium, uses
(laminated metal-vanadium layer in ball-limiting metallurgies for solder bumps)
IT 7440-32-6, Titanium, uses 65453-97-6, NiV
(refractory metal in laminated metal-vanadium metal layer)
OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 5 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2006:1153694 HCAPLUS Full-text
DOCUMENT NUMBER: 145:464285
TITLE: Solder deposition on wafer backside for thin-die thermal interface material
INVENTOR(S): Lu, Daoqiang
PATENT ASSIGNEE(S): Intel Corporation, USA
SOURCE: U.S. Pat. Appl. Publ., 15pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20060244148	A1	20061102	US 2005-116554 <--	20050428
US 7288438	B2	20071030		
US 20080191358	A1	20080814	US 2007-770981 <--	20070629
PRIORITY APPLN. INFO.:			US 2005-116554 <--	A3 20050428

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
ED Entered STN: 02 Nov 2006
AB A thermal interface solution is often needed to allow the die to reject heat more efficiently. A solder is deposited on the backside of a wafer. The wafer can be pre-deposited with a barrier layer such as a Ti base and other materials. Deposition is carried out by electroplating, electroless plating, CVD, and phys. vapor deposition. The solder-deposited die is bonded with a heat spreader that did not require a pre-deposited solder.
IT 12668-36-9
(solder; solder deposition on wafer backside for thin-die thermal interface material of packages)
RN 12668-36-9 HCAPLUS
CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

INCL 257772000; 257782000; 257712000; 257720000; 438122000; 438612000
CC 76-3 (Electric Phenomena)
Section cross-reference(s): 48
IT Coating process
(electroless; solder deposition on wafer backside for thin-die thermal interface material of packages)
IT Adhesive films
Coating process
Cutting
Diffusion barrier
Electrodeposition
Electronic packaging process
Heat sinks
Lamination
Soldering
Solders
(solder deposition on wafer backside for thin-die thermal interface material of packages)
IT 7440-31-5, Tin, processes 7440-57-5, Gold, processes 7440-74-6, Indium, processes 11124-13-3 12668-36-9 12727-40-1, Gold 80, tin 20 12785-33-0 101922-48-9 110092-93-8
(solder; solder deposition on wafer backside for thin-die thermal interface material of packages)
OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 6 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2006:1098045 HCAPLUS Full-text
DOCUMENT NUMBER: 145:447447
TITLE: Fan out type wafer level package structure and method of the same
INVENTOR(S): Yang, Wen-Kun
PATENT ASSIGNEE(S): Advanced Chip Engineering Technology, Inc., Taiwan
SOURCE: U.S. Pat. Appl. Publ., 13pp., Cont.-in-part of U.S. Ser. No. 725,933.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20060231958	A1	20061019	US 2006-456141 <--	20060707
US 7514767	B2	20090407		
US 20050124093	A1	20050609	US 2003-725933 <--	20031203
US 7459781	B2	20081202		
PRIORITY APPLN. INFO.:			US 2003-725933 <--	A2 20031203

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
ED Entered STN: 20 Oct 2006
AB To pick and place standard dice on a new base for obtaining an appropriate and wider distance between dice than the original distance of dice on a wafer. The package structure has a larger size of balls array than the size of the

die by fan out type wafer level package. Also, the die may be packaged with passive components or other dice with a side by side structure or a stacking structure.

IT 7440-50-8, Copper, processes 12668-36-9
(fan out type wafer level package structure and method of its manufacture)
RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

Cu

RN 12668-36-9 HCAPLUS
CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

INCL 257777000
CC 76-3 (Electric Phenomena)
IT Films
(elec. conductive; fan out type wafer level package structure and method of its manufacture)
IT Contact holes
Cutting
Dielectric films
Electric contacts
Electronic packages
Electronic packaging process
Interconnections, electric
Lamination
Semiconductor device fabrication
Soldering
Solders
(fan out type wafer level package structure and method of its manufacture)
IT Electric conductors
(films; fan out type wafer level package structure and method of its manufacture)
IT 7440-02-0, Nickel, processes 7440-32-6, Titanium, processes 7440-50-8, Copper, processes 7440-57-5, Gold, processes 11099-27-7 11136-88-2 11148-32-6 12647-03-9 12668-36-9 39332-67-7, Kovar 39362-79-3, Alloy 42 39428-04-1
(fan out type wafer level package structure and method of its manufacture)
REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 7 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2006:1037669 HCAPLUS Full-text
DOCUMENT NUMBER: 145:367984
TITLE: Electronic package sealing by soldering with Pb-free high melting solders

INVENTOR(S): Terakawa, Toshiro; Noshiro, Keishi
PATENT ASSIGNEE(S): Yoshikawa Kogyo Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006269970	A	20061005	JP 2005-89445 <--	20050325
PRIORITY APPLN. INFO.:			JP 2005-89445 <--	20050325

ED Entered STN: 06 Oct 2006
AB The title package sealing process involves soldering on a metal lid with Cu and Sn films (thickness 5-20 μm), closing a ceramic hollow package with the Cu/Sn-soldered lid, and heating at ≥m.p. of Sn to form a Cu-Sn alloy and consequently sealing the lid on the package opening. The process provides easy and low cost alloying, soldering, and sealing the package with the lid.
IT 7440-50-8, Copper, reactions
(solder alloy formation with Sn; electronic package sealing by soldering with Pb-free high melting solders)
RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

Cu

IT 12668-36-9P
(solder formation; electronic package sealing by soldering with Pb-free high melting solders)
RN 12668-36-9 HCAPLUS
CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

CC 76-2 (Electric Phenomena)
Section cross-reference(s): 56, 57
ST copper tin alloy solder soldering electronic ceramic package sealing
IT Electronic packages
Sealing
Soldering
(electronic package sealing by soldering with Pb-free high melting solders)
IT Ceramics
(electronic package; electronic package sealing by soldering with Pb-free high melting solders)
IT Solders
(formation, for Cu-Sn solder; electronic package sealing by

soldering with Pb-free high melting solders)
IT 7440-31-5, Tin, reactions
(solder alloy formation with Cu; electronic package sealing by soldering with Pb-free high melting solders)
IT 7440-50-8, Copper, reactions
(solder alloy formation with Sn; electronic package sealing by soldering with Pb-free high melting solders)
IT 12668-36-9P
(solder formation; electronic package sealing by soldering with Pb-free high melting solders)

L52 ANSWER 8 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2006:151229 HCAPLUS Full-text
DOCUMENT NUMBER: 144:203760
TITLE: Heat sink member for electronic package and method for manufacture thereof
INVENTOR(S): Shiomi, Kazuhiro; Ishio, Masaaki; Hasegawa, Tsuyoshi
PATENT ASSIGNEE(S): Neomax Materials Co., Ltd., Japan
SOURCE: PCT Int. Appl., 29 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006016479	A1	20060216	WO 2005-JP13705 <--	20050727
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
JP 4350753	B2	20091021	JP 2006-531412 <--	20050727
US 20060244125	A1	20061102	US 2006-566721 <--	20060202
PRIORITY APPLN. INFO.:			JP 2004-233777 A <--	20040810
			WO 2005-JP13705 W <--	20050727

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
ED Entered STN: 17 Feb 2006
AB A heat sink member which has a mating material comprising Cu as a main component, a substrate comprising Mo as a main component and, arranged between the mating material and the substrate, a brazing layer comprising a Sn-Cu alloy (Sn: 1 to 13 mass %) for joining the mating material and the substrate. The heat sink member allows the inhibition of the occurrence of cracking or crazing during the production thereof, the inhibition of the increase of a

thermal expansion coefficient, and also the inhibition of the lowering of thermal conductivity
IT 7439-98-7, Molybdenum, processes 7440-50-8, Copper, processes 12668-36-9
(Cu-Mo heat sink for electronic package)
RN 7439-98-7 HCAPLUS
CN Molybdenum (CA INDEX NAME)

Mo

RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

Cu

RN 12668-36-9 HCAPLUS
CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

CC 76-3 (Electric Phenomena)
Section cross-reference(s): 56
ST copper molybdenum heat sink electronic package
IT Electronic packages
Heat sinks
(Cu-Mo heat sink for electronic package)
IT 7439-98-7, Molybdenum, processes 7440-50-8, Copper, processes 12668-36-9
(Cu-Mo heat sink for electronic package)
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 9 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2005:1317992 HCAPLUS Full-text
DOCUMENT NUMBER: 144:223851
TITLE: Ultrathin soldered flip chip interconnections on flexible substrates
AUTHOR(S): Pahl, Barbara; Loeher, Thomas; Kallmayer, Christine; Aschenbrenner, Rolf; Reichl, Herbert
CORPORATE SOURCE: Research Center of Microperipheric Technologies, Technical University of Berlin, Berlin, D-13355, Germany
SOURCE: Proceedings - Electronic Components & Technology Conference (2004), 54th(Vol. 2), 1244-1250
CODEN: PETCES
PUBLISHER: Institute of Electrical and Electronics Engineers

DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 19 Dec 2005
AB Flip chip assembly of Si IC's on flexible substrates has gained more interest in the last years. On the one hand there are numerous low cost applications for this technol. such as smart cards and smart labels, however, flexible substrates offer a wide potential for highly complex folded packages and 3-dimensional modules. Using conventional flip chip assembly processes the stand-off is too high compared to the dimensions of chip and substrate. Until now solder application by stencil printing is only used successfully down to 150 μm pitch with bump heights larger than 70 μm due to the solder paste and stencil features. Deposition technologies for smaller solder vols. together with new assembly processes have to be developed and qualified to realize suitable contact heights. With the immersion soldering process a cost effective massless bumping process for thin solder layers was developed. Thermode bonding was studied as a promising fast flip chip technol. for thin soldered contacts on flexible substrates. The process development for 2 different solder materials in combination with no-flow under-filler materials will be presented for flip chip contacts of <10 μm height. The reliability of thin solder joints is a key issue. Therefore, the failure mechanisms and the ageing behavior were studied. The intermetallic phase formation has a larger influence because the intermetallics consume the majority of the solder alloy. The effect of intermetallic growth for the different solder materials as well as the impact of the small stand-off during ageing are studied. Special emphasis is put on failures resulting from the joint geometry of ultrathin contacts. The promising results of a reliability test program consisting of thermal cycling, temperature/humidity testing and multiple reflow tests are discussed.
IT 12668-36-9
(ultrathin soldered flip chip interconnections on flexible substrates)
RN 12668-36-9 HCAPLUS
CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

CC 76-14 (Electric Phenomena)
IT Electronic packages
(integrated circuits; ultrathin soldered flip chip interconnections on flexible substrates)
IT 7440-22-4, Silver, uses 11110-87-5 11144-61-9 12044-91-6
12202-01-6 12668-36-9 12670-46-1
(ultrathin soldered flip chip interconnections on flexible substrates)
OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 10 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2005:1130085 HCAPLUS Full-text
DOCUMENT NUMBER: 143:414520
TITLE: Electronic chip components provided with external contacts for packaging by soldering connection

INVENTOR(S): Iemura, Tsutomu
PATENT ASSIGNEE(S): Kyocera Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005294618	A	20051020	JP 2004-108879 <--	20040401
PRIORITY APPLN. INFO.:			JP 2004-108879 <--	20040401

ED Entered STN: 21 Oct 2005
AB The external contacts for the title components such as laminated chip capacitors comprise (1) a conductive Ni-plating sublayer, (2) a Sn-containing 1st plating layer formed on the sublayer, and (3) a 2nd plating layer (thickness 0.01-0.05 μm) as a surface layer having m.p. lower than that of the 1st plating layer. The laminated contacts give the chips good solder-wettability without chip-standing-up problems.
IT 12668-36-9
(surface layer, for external contact, for soldering; electronic chip components provided with external contacts for packaging by soldering connection)
RN 12668-36-9 HCAPLUS
CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

IC ICM H01G004-12
ICS H01G004-252; H01G004-30
CC 76-2 (Electric Phenomena)
Section cross-reference(s): 56
ST nickel plating sublayer external contact chip capacitor; tin plating intermediate layer external contact chip capacitor; surface plating low melting surface layer soldering wettability
IT Electric apparatus
(chip component; electronic chip components provided with external contacts for packaging by soldering connection)
IT Capacitors
(chip-type, external contact multilayer; electronic chip components provided with external contacts for packaging by soldering connection)
IT Electric contacts
(external, multilayer; electronic chip components provided with external contacts for packaging by soldering connection)
IT Wettability
(soldering; electronic chip components provided with external contacts for packaging by soldering connection)
IT Soldering
(wettability, elec. contacts for; electronic chip components provided with external contacts for packaging by soldering

connection)
IT 7440-31-5, Tin, properties
(intermediate layer for external contact; electronic chip components provided with external contacts for packaging by soldering connection)
IT 7440-02-0, Nickel, properties
(sublayer for external contact; electronic chip components provided with external contacts for packaging by soldering connection)
IT 12668-36-9
(surface layer, for external contact, for soldering; electronic chip components provided with external contacts for packaging by soldering connection)

L52 ANSWER 11 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2005:975701 HCAPLUS Full-text
DOCUMENT NUMBER: 143:276738
TITLE: Method of manufacturing a connection between several polymer-insulated conductors
INVENTOR(S): Blind, Sven; Woerner, Norbert; Konrad, Rainer
PATENT ASSIGNEE(S): Minebea Co., Ltd., Japan
SOURCE: Eur. Pat. Appl., 6 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1571731	A1	20050907	EP 2005-3715	20050222
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, BA, HR, IS, YU				
DE 102004010723	A1	20050922	DE 2004-102004010723	20040305
PRIORITY APPLN. INFO.:			DE 2004-102004010723A	20040305

ED Entered STN: 08 Sep 2005
AB The discovery concerns a method for the fabrication of an elec. interconnect between several polymer insulated elec. conductors. The non-insulated end of the conductor is enclosed in a metal sheath and the ends lie parallel to each other. The metal houses are joined by welding.
IT 7439-98-7, Molybdenum, processes 7440-50-8, Copper, processes 12668-36-9
(manufacturing connection between several polymer-insulated conductors)
RN 7439-98-7 HCAPLUS
CN Molybdenum (CA INDEX NAME)

Mo

RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

Cu

RN 12668-36-9 HCAPLUS
CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

IC ICM H01R004-02
CC 76-2 (Electric Phenomena)
Section cross-reference(s): 38, 48
ST connection welding metal conductor polymer insulator
IT Electric cables
Electric conductors
Welding of metals
(manufacturing connection between several polymer-insulated conductors)
IT 7439-98-7, Molybdenum, processes 7440-02-0, Nickel, processes 7440-50-8, Copper, processes 12597-69-2, Steel, processes 12668-36-9
(manufacturing connection between several polymer-insulated conductors)
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 12 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2005:693284 HCAPLUS Full-text
DOCUMENT NUMBER: 144:296469
TITLE: Effect of weld metal copper content on HAZ cracking in austenitic stainless steel welded with Al brass
AUTHOR(S): Lee, H. W.; Sung, J. H.
CORPORATE SOURCE: Welding Research Team of Hanjin Heavy Industries, Pusan, S. Korea
SOURCE: Science and Technology of Welding and Joining (2005), 10(2), 145-148
CODEN: STWJFX; ISSN: 1362-1718
URL: http://www.ingentaconnect.com/content/maney/stwj/2005/00000010/00000002
PUBLISHER: Maney Publishing
DOCUMENT TYPE: Journal; (online computer file)
LANGUAGE: English
ED Entered STN: 04 Aug 2005
AB Austenitic stainless steel has good weldability but is sensitive to hot cracking such as solidification and liquation cracking. In the present study, specimens of dissimilar metals made from austenitic stainless steel and Al brass were welded by the GTAW process using four different filler metals. Cracks were detected in the heat affected zone of the stainless steel when welded with CuAl, CuSn and NiCu filler metals, but no cracks were detected when a Ni filler metal was used. The cracks propagated along the grain boundary in the heat affected zone near the fusion line to the base metal of 316L stainless steel. The cracks were located inside the weld bead with very fine hairline cracking. All cracks initiated at the fusion line and moved forward in the base metal. From energy dispersion spectroscopy (EDS), the Cu peak was detected only in the crack-opening area.
IT 878484-82-3, ERCuSn-B

(filler; effect of weld metal copper content on HAZ cracking in austenitic stainless steel welded with Al brass)
RN 878484-82-3 HCAPLUS
CN Copper alloy, base, Cu,Sn (ERCuSn-B) (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	92	7440-50-8
Sn	8	7440-31-5

CC 55-9 (Ferrous Metals and Alloys)
IT Welding of metals
(gas tungsten-arc; effect of weld metal copper content on HAZ cracking in austenitic stainless steel welded with Al brass)
IT 56780-79-1, ER NiCu-7 57895-30-4, ER Ni-1 133004-50-9, ER CuAl-A2 878484-82-3, ERCuSn-B
(filler; effect of weld metal copper content on HAZ cracking in austenitic stainless steel welded with Al brass)
OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 13 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2005:346293 HCAPLUS Full-text
DOCUMENT NUMBER: 142:402173
TITLE: Partly insulator-laminated metal tapes for packaging electronic devices and manufacturing tapes thereof
INVENTOR(S): Kaimori, Shingo; Sugimoto, Yuji; Nakazawa, Yoshihiro; Matsuyama, Manabu
PATENT ASSIGNEE(S): Sumitomo Electric Wintec, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 21 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005108927	A	20050421	JP 2003-336913 <--	20030929
PRIORITY APPLN. INFO.:			JP 2003-336913 <--	20030929

ED Entered STN: 22 Apr 2005
AB The title metal tape is partly laminated with polymer insulator layers wherein the insulator layers contain an adhesive agent and a filler are oxidized on their surface to form Cu2O. The adhesive agent may be thiols, amines, benzotriazoles, or benzimidazoles. The tapes have excellent punching, plating, and atmospheric stabilities.
IT 12793-09-8
(metal tape; partly insulator-coated metal tapes for packaging electronic devices and manufacturing tapes thereof)
RN 12793-09-8 HCAPLUS
CN Copper alloy, base, Cu 92,Sn 8 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	92	7440-50-8
Sn	8	7440-31-5

IC ICM H01L023-06
ICS B32B007-02; B32B015-08; H01L023-00
CC 76-2 (Electric Phenomena)
Section cross-reference(s): 38, 56
ST polymer insulator lamination metal tape adhesive electronic packaging
IT Amines, properties
Thiols, properties
(adhesive; partly insulator-coated metal tapes for packaging electronic devices and manufacturing tapes thereof)
IT Electric insulators
(laminating layers; partly insulator-coated metal tapes for packaging electronic devices and manufacturing tapes thereof)
IT Electric apparatus
(packaging tapes for; partly insulator-coated metal tapes for packaging electronic devices and manufacturing tapes thereof)
IT Adhesives
Fillers
Oxidation
Punching
Soldering
(partly insulator-coated metal tapes for packaging electronic devices and manufacturing tapes thereof)
IT Coating process
(plating; partly insulator-coated metal tapes for packaging electronic devices and manufacturing tapes thereof)
IT Electric insulators
(polymer adhesive agent containing; partly insulator-coated metal tapes for packaging electronic devices and manufacturing tapes thereof)
IT Materials
(tapes, metal, insulator laminated; partly insulator-coated metal tapes for packaging electronic devices and manufacturing tapes thereof)
IT 25895-32-3, Trimellitic acid-methylenedianiline copolymer
(adhesive agent; partly insulator-coated metal tapes for packaging electronic devices and manufacturing tapes thereof)
IT 51-17-2, Benzimidazole 95-14-7, 1H-Benzotriazole
(adhesive; partly insulator-coated metal tapes for packaging electronic devices and manufacturing tapes thereof)
IT 7440-21-3, Silicon, properties
(filler; partly insulator-coated metal tapes for packaging electronic devices and manufacturing tapes thereof)
IT 11109-50-5, SUS 304 12793-09-8 79682-63-6
(metal tape; partly insulator-coated metal tapes for packaging electronic devices and manufacturing tapes

thereof)
IT 1317-39-1P, Cuprous oxide, properties
(partly insulator-coated metal tapes for packaging electronic devices and manufacturing tapes thereof)
OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L52 ANSWER 14 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2004:765542 HCAPLUS Full-text
DOCUMENT NUMBER: 141:358784
TITLE: Investigation of lead-free package reliability: a new, reliable material is essential
AUTHOR(S): Lee, Jeffrey C. B.; Li, Simon S. M.
CORPORATE SOURCE: ASE, Kaohsiung, Taiwan, Taiwan
SOURCE: Advanced Packaging (2004), 13(8), 27-29
CODEN: ADPAFZ; ISSN: 1065-0555
PUBLISHER: PennWell Corp.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 20 Sep 2004
AB A review. Solder containing lead has been widely used in the electronics industry as an interconnect and surface finish for PCBs for more than 50 yr. The lead-free conversion involves the entire supply chain in the electronics industry, requiring consideration of its impact on the current process, equipment compatibility, cost, operator training, etc. The major concerns arising from promising replacements of lead-free solder, such as ternary SnAgCu alloy in laminate package and binary SnCu, and SnBi alloy and matte Sn in a lead frame package, are high m.ps. in comparison to the eutectic SnPb alloy. Components subjected to a stringent 30° to 40° higher temperature surface mount soldering process to induce significant thermal stress and vapor pressure inside the packages give rise to typical failure inside the package. Thus, to reduce the propensity of package failure, a new and reliable material is essential. Lower moisture uptake, higher adhesion strength, optimized modulus and lowest CTE mismatch with related materials will be major factors to address the capability in higher reflow temperature
IT 12668-36-9
(study of lead-free package reliability)
RN 12668-36-9 HCAPLUS
CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

CC 76-3 (Electric Phenomena)
IT Electronic packages
Electronic packaging materials
Electronic packaging process
Printed circuit boards
(study of lead-free package reliability)
IT 12668-36-9 12713-30-3 63807-21-6
(study of lead-free package reliability)

L52 ANSWER 15 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2004:680884 HCAPLUS Full-text
DOCUMENT NUMBER: 141:198318
TITLE: Electronic package mounting on electric devices

INVENTOR(S): Matsuzono, Seigo; Shimogai, Masaki; Miyamoto, Yoshimasa
PATENT ASSIGNEE(S): Kyocera Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004235369	A	20040819	JP 2003-21179 <--	20030129
PRIORITY APPLN. INFO.:			JP 2003-21179 <--	20030129

ED Entered STN: 20 Aug 2004
AB The title elec. devices are prepared by (1) mounting a 1st package by soldering with a 1st solder on an upper surface of an insulative substrate which have Cu external contact pads provided on its lower surface and (2) mounting the 1st-package-mounted insulative substrate on an external elec. circuit substrate by soldering between the Cu external contact pads and the external elec. circuit substrate pads with a Sn-containing 2nd solder. A Cu-Sn alloy particle thin film (particle size 0.5-10 μm) is provided between the Cu external contact pads and the Sn-containing 2nd solder. The thin film of the Cu-Sn alloy particles provides strong adhesion between the Cu external contact pads and the Sn-containing 2nd solder to prevent delamination under repeated thermal stress.
IT 7440-50-8, Copper, properties
(external contacts; electronic package mounting on elec. devices by soldering with adhesive Cu-Sn alloy particle layer
)
RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

Cu

IT 12668-36-9
(microparticle layer for adhesion of solder and pad; electronic package mounting on elec. devices by soldering with adhesive Cu-Sn alloy particle layer)
RN 12668-36-9 HCAPLUS
CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

IC ICM H01L023-12
ICS H05K001-18; H05K003-34
CC 76-3 (Electric Phenomena)
Section cross-reference(s): 56
IT Solders
(Sn-containing; electronic package mounting on elec. devices by

soldering with adhesive Cu-Sn alloy particle layer
)
IT Adhesion, physical
Electric apparatus
Electronic packages
Soldering
(electronic package mounting on elec. devices by soldering with adhesive Cu-Sn alloy particle layer)
IT Electronic packages
(integrated circuits; electronic package mounting on elec. devices by soldering with adhesive Cu-Sn alloy particle layer)
IT Integrated circuits
(packages; electronic package mounting on elec. devices by soldering with adhesive Cu-Sn alloy particle layer
)
IT Delamination
(prevention; electronic package mounting on elec. devices by soldering with adhesive Cu-Sn alloy particle layer
)
IT Stress, mechanical
(thermal; electronic package mounting on elec. devices by soldering with adhesive Cu-Sn alloy particle layer
)
IT 7440-50-8, Copper, properties
(external contacts; electronic package mounting on elec. devices by soldering with adhesive Cu-Sn alloy particle layer
)
IT 12668-36-9
(microparticle layer for adhesion of solder and pad; electronic package mounting on elec. devices by soldering with adhesive Cu-Sn alloy particle layer)

L52 ANSWER 16 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2004:253865 HCAPLUS Full-text
DOCUMENT NUMBER: 140:295768
TITLE: Structural solder ball for electronic packaging
INVENTOR(S): Liao, Yongfeng
PATENT ASSIGNEE(S): Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 12 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1386609	A	20021225	CN 2001-112936 <--	20010518
PRIORITY APPLN. INFO.:			CN 2001-112936 <--	20010518

ED Entered STN: 29 Mar 2004
AB The solder ball, which is used for soldering of integrated circuit boards, contains a low-resistance metal with higher m.p. such as Pt, Au, Ag, Sn, Sn-Ag, Sn-Ag-Cu, Sn-Cu, or Ag-Cu in the central part, Sn, Sb, Pb, Bi, or In metals with lower m.ps. in the outer part, and an anti-oxidation film on the surface. The distribution of the solder components in a solder ball is continuous, and there are no distinct layers of different components.

IT 12668-36-9
(solder ball for electronic packaging)
RN 12668-36-9 HCAPLUS
CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

IC ICM B23K035-24
ICS B23K031-12; H05K003-34; H01L025-00
CC 76-3 (Electric Phenomena)
Section cross-reference(s): 56
IT Electronic packages
(integrated circuits; solder ball for electronic packaging)
IT 7439-92-1, Lead, uses 7440-06-4, Platinum, uses 7440-22-4, Silver, uses 7440-31-5, Tin, uses 7440-36-0, Antimony, uses 7440-57-5, Gold, uses 7440-69-9, Bismuth, uses 7440-74-6, Indium, uses 11144-43-7 11144-61-9 12668-36-9 63807-21-6
(solder ball for electronic packaging)

L52 ANSWER 17 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2004:100245 HCAPLUS Full-text
DOCUMENT NUMBER: 140:150146
TITLE: Brazed copper heat exchangers and their fabrication process by welding
INVENTOR(S): Bonnet, Christian; Fortain, Jean Marie; Wagner, Marc
PATENT ASSIGNEE(S): L'air Liquide Societe Anonyme Pour L'etude Et L'exploitation Des ProcedesGeorges Claude, Fr.
SOURCE: Fr. Demande, 17 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2843059	A1	20040206	FR 2002-9658 <--	20020730
FR 2843059	B1	20050225		
EP 1422010	A1	20040526	EP 2003-300062 <--	20030716
EP 1422010	B1	20060322		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
AT 320876	T	20060415	AT 2003-300062 <--	20030716
JP 2004066342	A	20040304	JP 2003-203183 <--	20030729
JP 4373149	B2	20091125		
CN 1325222	C	20070711	CN 2003-150380 <--	20030730
US 20070214641	A1	20070920	US 2007-752154 <--	20070522
PRIORITY APPLN. INFO.:			FR 2002-9658 A <--	20020730

US 2003-628153 A1 20030728
<--

ED Entered STN: 08 Feb 2004

AB Arc welding of a metal part on a substrate containing ≥1 brazed zone containing a (Cu+P)-containing braze involves (1) deposition of a Cu alloy layer containing >1 weight% Sn on at least a portion of the brazed zone and (2) welding of the metal part to the deposited Cu-Sn alloy layer. The procedure is suitable for joining of heat exchanger parts made of stainless steel and Cu, especially for cryogenic air separation

IT 7440-50-8, Copper, processes
(arc welding of brazed copper heat exchangers for cryogenic air separation)

RN 7440-50-8 HCAPLUS

CN Copper (CA INDEX NAME)

Cu

IT 68369-20-0 76367-38-9 651730-62-0
(interlayer in arc welding of brazed copper heat exchangers for cryogenic air separation)

RN 68369-20-0 HCAPLUS

CN Copper alloy, base, Cu 90-99,Sn 1-10 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	90 - 99	7440-50-8
Sn	1 - 10	7440-31-5

RN 76367-38-9 HCAPLUS

CN Copper alloy, base, Cu 92-98,Sn 2-8 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	92 - 98	7440-50-8
Sn	2 - 8	7440-31-5

RN 651730-62-0 HCAPLUS

CN Copper alloy, base, Cu 94-97,Sn 3-6 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	94 - 97	7440-50-8
Sn	3 - 6	7440-31-5

IC ICM B23K009-16
ICS B23K009-23; B23K001-00; B23K101-14

CC 56-9 (Nonferrous Metals and Alloys)
Section cross-reference(s): 47, 49

IT Welding of metals
(of brazed copper heat exchangers)

IT 7440-50-8, Copper, processes
(arc welding of brazed copper heat exchangers for cryogenic air separation)

IT 68369-20-0 76367-38-9 651730-62-0
(interlayer in arc welding of brazed copper heat exchangers for cryogenic air separation)
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 18 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2003:962672 HCAPLUS Full-text
DOCUMENT NUMBER: 140:427081
TITLE: Effect of alloying elements on laser welding characteristics of copper plate
AUTHOR(S): Arai, Hirofumi; Ogura, Tetsuzo; Osako, Junichi
CORPORATE SOURCE: Copper Products Research Section, Chofu Plant, Aluminum & Copper Company, Kobe Steel, Ltd., Japan
SOURCE: Do to Dogokin (2003), 42, 120-125
CODEN: DDOOAW; ISSN: 1347-7234
PUBLISHER: Do oyobi Dogokin Gijutsu Kenkyukai
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
ED Entered STN: 10 Dec 2003
AB Recently, car electronics are developing rapidly and the number of elec. wiring has increased because a range of safety, for example. Air bag and ABS or comfort equipment has become standard such as ITS and Car navigation. Therefore, connectors designed for multipolarization have been developed. At the same time, to save space, the size of connectors must be reduced and it is required that the welding and junction are carried out in the narrow area range. Though conventional soldered joints are simple and cheap, but the reliability is relatively low because the soldering process produces thermal defects in a wide range. In addition, technol. which replaces soldered joints is required from the environmental viewpoint. The laser is the method to meet these demand. Though the market has required copper material suitable for the laser joining, there are few refs. that report on the effect of the additive elements on laser welding characteristic. This study concerns the effect of the additive elements on laser welding characteristic by evaluating shear strength and spatter. As the result, laser welding characteristic is improved by addnl. elements of Sn, Fe, Co and Si, and the Sn plating improved the bond strength by the enhanced laser absorption rate, however it increased the width of HAZ.
IT 7440-50-8, Copper, processes 12621-73-7
(effect of alloying elements on laser welding characteristics of copper plate)
RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

Cu

RN 12621-73-7 HCAPLUS
CN Copper alloy, base, Cu 99,Sn 1 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	99	7440-50-8
Sn	1	7440-31-5

CC 56-9 (Nonferrous Metals and Alloys)
IT Welding of metals
(laser; effect of alloying elements on laser welding characteristics of copper plate)
IT 7440-50-8, Copper, processes 11123-03-8 11137-01-2
11137-03-4 11137-05-6 12621-52-2 12621-73-7
12639-35-9 12643-49-1 39397-99-4 42611-78-9 50948-77-1
51402-81-4 52359-50-9 53740-65-1 53805-10-0 55351-71-8
55823-18-2 61455-48-9 67419-43-6 73433-29-1 82282-31-3
82348-67-2 117915-87-4
(effect of alloying elements on laser welding characteristics of copper plate)

L52 ANSWER 19 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2003:723516 HCAPLUS Full-text
DOCUMENT NUMBER: 139:238534
TITLE: Lead-free solders for electronic device fabrication in atmosphere
INVENTOR(S): Soga, Tasao; Shimokawa, Hanae; Nakatsuka, Tetsuya; Negishi, Mikio; Nakajima, Koichi; Endo, Tsuneo
PATENT ASSIGNEE(S): Hitachi Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 23 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003260587	A	20030916	JP 2002-64251 <--	20020308
JP 3757881	B2	20060322		
US 20030224197	A1	20031204	US 2003-384931 <--	20030307
US 6872465	B2	20050329		
TW 230105	B	20050401	TW 2003-92104874 <--	20030307
CN 1443625	A	20030924	CN 2003-120150 <--	20030310
CN 100421861	C	20081001		
CN 101337308	A	20090107	CN 2008-10145147 <--	20030310
PRIORITY APPLN. INFO.:			JP 2002-64251 A <--	20020308
			CN 2003-120150 A3 <--	20030310

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
ED Entered STN: 16 Sep 2003
AB The solders consist of Sn-type solder balls (A), metal balls (B) having m.p. higher than that of A, and rosin fluxes (optional), wherein B, preferably selected from Cu, Al, Ag, Cu-Sn alloy, Ni-Sn alloy, Zn-Al alloy, and Au-Sn alloy, are covered with Ni layers (for preventing Au dispersion into B) and Au layers (for preventing oxidation of B) in this order. The solders consisting of Sn-type solder balls and Cu balls covered with Ni and Au layers are also claimed, wherein Cu balls are bonded to each other via Cu6Sn5-containing compds. which are formed at temps. higher than m.p. of Sn. The solders are useful for bonding semiconductor elements to substrates by 1st-reflow soldering at ≤290°, then the elements are subjected to 2nd-reflow soldering using Sn-Ag-Cu solders at .apprx.240°.

IT 7440-50-8, Copper, uses 12668-36-9
(balls; Pb-free solders consisting of Sn-type solder balls and Ni- and Au-covered metal balls for electronic device fabrication by 2-step soldering in atmospheric)
RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

RN 12668-36-9 HCAPLUS
CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

IC ICM B23K035-14
ICS H01L021-60; H01L023-10; H01L023-12; H05K003-34
CC 76-3 (Electric Phenomena)
Section cross-reference(s): 56
ST tin ball solder two step soldering; solder gold nickel covering copper ball; semiconductor module mounting reflow soldering tin
IT Electronic packages
Fluxes
Printed circuit boards
Semiconductor devices
Solders
(Pb-free solders consisting of Sn-type solder balls and Ni- and Au-covered metal balls for electronic device fabrication by 2-step soldering in atmospheric)
IT 12019-69-1P
(Pb-free solders consisting of Sn-type solder balls and Ni- and Au-covered metal balls for electronic device fabrication by 2-step soldering in atmospheric)
IT 7440-02-0, Nickel, uses 7440-57-5, Gold, uses
(Pb-free solders consisting of Sn-type solder balls and Ni- and Au-covered metal balls for electronic device fabrication by 2-step soldering in atmospheric)
IT 7429-90-5, Aluminum, uses 7440-22-4, Silver, uses 7440-31-5, Tin, uses 7440-50-8, Copper, uses 11110-83-1 11149-84-1 12668-36-9 12785-33-0
(balls; Pb-free solders consisting of Sn-type solder balls and Ni- and Au-covered metal balls for electronic device fabrication by 2-step soldering in atmospheric)
OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (8 CITINGS)

L52 ANSWER 20 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2002:682591 HCAPLUS Full-text
DOCUMENT NUMBER: 137:340721
TITLE: An evaluative study of lead-free deposits in high speed applications
AUTHOR(S): Lal, Sudarshan

CORPORATE SOURCE: FCI Electronics, Emigsville, PA, USA
SOURCE: Proceedings - AESF SUR/FIN Annual International Technical Conference (2001) 356-370
CODEN: PASCFU
PUBLISHER: American Electroplaters and Surface Finishers Society
DOCUMENT TYPE: Journal; (computer optical disk)
LANGUAGE: English
ED Entered STN: 10 Sep 2002
AB Due to impending environmental legislation and regulation in Japan and Europe, and marketing & economic pressures, the connector manufacturers are facing challenges to meet the demand for lead-free components. Several chemical suppliers have come up with lead-free alternatives offering different baths with bright and matte deposits containing tin, tin-copper, and tin-bismuth. This study was initiated in the hopes of applying high speed plating to terminals utilizing their proprietary recipes and evaluating critically the bath performance, deposit properties and potential applications in electronic connectors. Data on bath operation, current efficiency, adhesion, solderability utilizing wetting balance, aging studies, morphol. of deposits, porosity, composition and whisker growth are compared. Corrosion behavior of selected coatings was also studied. The general limitations and challenges from an operational viewpoint will be discussed.
IT 474126-13-1
(lead-free coating; effects of bath composition and current efficiency on adhesion, solderability, wetting, aging, morphol. of deposits, porosity and composition and whisker growth of Pb-free coating)
RN 474126-13-1 HCAPLUS
CN Copper alloy, base, Cu 98-99,Sn 1-1.5 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	98 - 99	7440-50-8
Sn	1 - 1.5	7440-31-5

CC 56-9 (Nonferrous Metals and Alloys)
ST leadfree coating solder electroplating electronic connector
IT Electric contacts
(connectors, electronic connectors; effects of bath composition and current efficiency on adhesion, solderability, wetting, aging, morphol. of deposits, porosity and composition and whisker growth of Pb-free coating)
IT Current efficiency
(in bath for Pb-free coating; effects of bath composition and current efficiency on adhesion, solderability, wetting, aging, morphol. of deposits, porosity and composition and whisker growth of Pb-free coating)
IT Adhesion, physical
Aging, materials
Crystal whiskers
Electrodeposition
Soldering
Wetting
(of Pb-free coating; effects of bath composition and current efficiency on adhesion, solderability, wetting, aging, morphol. of deposits, porosity and composition and whisker growth of Pb-free coating)
IT Surface structure
(of lead-free solder coating; effects of bath composition and

current efficiency on adhesion, solderability, wetting, aging, morphol. of deposits, porosity and composition and whisker growth of Pb-free coating)

IT Corrosion
(resistance, of lead-free coating; effects of bath composition and current efficiency on adhesion, solderability, wetting, aging, morphol. of deposits, porosity and composition and whisker growth of Pb-free coating)

IT 7786-81-4, Nickel sulfate
(Ni-matte, Ni under-layer deposited from; effects of bath composition and current efficiency on adhesion, solderability, wetting, aging, morphol. of deposits, porosity and composition and whisker growth of Pb-free coating)

IT 7440-44-0, Carbon, uses
(in lead-free solder coating; effects of bath composition and current efficiency on adhesion, solderability, wetting, aging, morphol. of deposits, porosity and composition and whisker growth of Pb-free coating)

IT 7440-31-5, Tin, processes 145890-38-6 215371-96-3 263014-78-4 474126-13-1
(lead-free coating; effects of bath composition and current efficiency on adhesion, solderability, wetting, aging, morphol. of deposits, porosity and composition and whisker growth of Pb-free coating)

IT 12644-62-1
(phosphorus bronze, substrate; effects of bath composition and current efficiency on adhesion, solderability, wetting, aging, morphol. of deposits, porosity and composition and whisker growth of Pb-free coating)

IT 12701-18-7
(solder coating; effects of bath composition and current efficiency on adhesion, solderability, wetting, aging, morphol. of deposits, porosity and composition and whisker growth of Pb-free coating)

IT 12597-71-6, Brass, processes 90014-29-2, Alloy 42
(substrate; effects of bath composition and current efficiency on adhesion, solderability, wetting, aging, morphol. of deposits, porosity and composition and whisker growth of Pb-free coating)

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 21 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2002:413259 HCAPLUS Full-text
DOCUMENT NUMBER: 136:389279
TITLE: Diffusion welding of P/M bronze bearings to a rolled plain carbon steel
AUTHOR(S): Kurt, Adem; Saritas, Suleyman
CORPORATE SOURCE: Department of Metals Technology, Gazi University, Teknikokullar/Ankara, Turk.
SOURCE: Advances in Powder Metallurgy & Particulate Materials (2001) 6/102-6/109
CODEN: APMME3; ISSN: 1065-5824
PUBLISHER: Metal Powder Industries Federation
DOCUMENT TYPE: Journal; (computer optical disk)
LANGUAGE: English
ED Entered STN: 03 Jun 2002
AB In this study, effects of welding parameters on the performance of joints obtained by diffusion bonding of P/M bronze to a plain carbon steel was

investigated. P/M bearing materials were prepared from atomized bronze (90w/oCu + 10w/oSn) powder. Pressing was carried out to obtain 25% porosity in the sintered state. Sintering was carried out in a laboratory tube furnace under argon atmospheric at 800 °C for 45 min. The surfaces which would be joined were ground and polished to 0.6 μ finish and cleaned from any grease or stain. Then, diffusion bonding of P/M bearing materials to the plain carbon steel were carried out in a special fixture under 25 MPa contact pressure and 650 °C for 30, 45 and 60 min, and 750 °C and 800 °C for 60 min. The joints were characterized using light and SEM microscopy and miniature tensile tests. Bond strength as high as the strength of the bronze were recorded.

IT 11099-34-6
(diffusion welding of powder metallurgy bronze bearings to a rolled plain carbon steel)

RN 11099-34-6 HCAPLUS

CN Copper alloy, base, Cu 90,Sn 10 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	90	7440-50-8
Sn	10	7440-31-5

CC 56-9 (Nonferrous Metals and Alloys)
Section cross-reference(s): 55

IT Welding of metals
(diffusion; diffusion welding of powder metallurgy bronze bearings to a rolled plain carbon steel)

IT 11099-34-6 11121-90-7, Carbon steel, processes
12597-70-5, Bronze
(diffusion welding of powder metallurgy bronze bearings to a rolled plain carbon steel)

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 22 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2002:123942 HCAPLUS Full-text

DOCUMENT NUMBER: 136:328923

TITLE: Electrical MAG welding of zinc galvanized steel sheets

AUTHOR(S): Claeys, J.

CORPORATE SOURCE: Sollac, Dunkerque, F-59381, Fr.

SOURCE: European Commission, [Report] EUR (2001), EUR 19985, 1-110
CODEN: CECED9; ISSN: 1018-5593

DOCUMENT TYPE: Report

LANGUAGE: French

ED Entered STN: 17 Feb 2002

AB Final report on the study of welding of two zinc galvanized carbon steels for automotive industry is presented. Mech. behavior, fatigue and corrosion resistance of the welds are reported. The technol. parameters of the welding process are optimized and the pos. effect of Cu-0.8% Sn welding wire is demonstrated.

IT 12682-95-0
(welding wire; elec. MAG welding of zinc galvanized steel sheets for automotive industry)

RN 12682-95-0 HCAPLUS

CN Copper alloy, base, Cu 94,Sn 6 (CA INDEX NAME)

Component Component Component

	Percent	Registry Number
Cu	94	7440-50-8
Sn	6	7440-31-5

CC 56-9 (Nonferrous Metals and Alloys)
IT Welding of metals
(MAG; elec. MAG welding of zinc galvanized steel sheets for automotive industry)
IT Automobiles
(bodies; elec. MAG welding of zinc galvanized steel sheets for automotive industry)
IT Fatigue, mechanical
(elec. MAG welding of zinc galvanized steel sheets for automotive industry)
IT Galvanized steel
(elec. MAG welding of zinc galvanized steel sheets for automotive industry)
IT Corrosion
(resistance; elec. MAG welding of zinc galvanized steel sheets for automotive industry)
IT 9647-6-65-2, ZG25, processes 412285-87-1, ZE07, processes
(elec. MAG welding of zinc galvanized steel sheets for automotive industry)
IT 12614-75-4 12682-95-0 130863-37-5, Copper 99, tin 0.8
412287-20-8, GS1D10, processes
(welding wire; elec. MAG welding of zinc galvanized steel sheets for automotive industry)

L52 ANSWER 23 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2002:90491 HCAPLUS Full-text
DOCUMENT NUMBER: 136:143756
TITLE: Semiconductor device without erroneous operations, manufacturing method thereof and BGA-type semiconductor device
INVENTOR(S): Tanaka, Rika
PATENT ASSIGNEE(S): Nec Corporation, Japan
SOURCE: U.S. Pat. Appl. Publ., 13 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20020011664	A1	20020131	US 2001-915728 <--	20010726
JP 2002043352	A	20020208	JP 2000-226347 <--	20000727
US 20030183932	A1	20031002	US 2003-421430 <--	20030423
PRIORITY APPLN. INFO.:			JP 2000-226347 <--	A 20000727
			US 2001-915728 <--	B3 20010726

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
ED Entered STN: 01 Feb 2002
AB A semiconductor device is provided with a semiconductor substrate with an integrated circuit to which external electrodes are connected. The external

electrodes are made of at least one layer selected from among a Cu layer, a Sn-Cu alloy layer and a Sn-Ag alloy layer.
IT 7440-50-8, Copper, processes 12668-36-9
(semiconductor device without erroneous operations, manufacturing method thereof and BGA-type semiconductor device)
RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

Cu

RN 12668-36-9 HCAPLUS
CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

IC ICM H01L023-48
ICS H01L023-52; H01L029-40
INCL 257734000
CC 76-3 (Electric Phenomena)
IT Adhesive bonding
Coating process
Diffusion barrier
Electric contacts
Electrodeposition
Electronic packages
Electronic packaging process
Etching
Integrated circuits
Lithography
Passivation
Semiconductor devices
Soldering
Solders
(semiconductor device without erroneous operations, manufacturing method thereof and BGA-type semiconductor device)
IT 7440-50-8, Copper, processes 11144-61-9
12668-36-9
(semiconductor device without erroneous operations, manufacturing method thereof and BGA-type semiconductor device)

L52 ANSWER 24 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2001:924240 HCAPLUS Full-text
DOCUMENT NUMBER: 136:46915
TITLE: Design and fabrication of a semiconductor device having conventional gull-wing and straight outer leads
INVENTOR(S): Sugihara, Koichi; Miyashita, Koichi
PATENT ASSIGNEE(S): Kabushiki Kaisha Toshiba, Japan
SOURCE: U.S. Pat. Appl. Publ., 18 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20010052643	A1	20011220	US 1999-324774 <--	19990603
US 6392293	B2	20020521		

PRIORITY APPLN. INFO.: JP 1998-155950 A 19980604 <--

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
ED Entered STN: 21 Dec 2001
AB A conventional semiconductor device having conventional gull-wing and straight outer leads and a manufacturing method of such a semiconductor device are described. Outer leads extend outward from within a package that seals a semiconductor chip, and they are connected to the semiconductor chip inside the package. Depressions are formed at the distal end portions of the outer leads. The depressions are coated with a material which is one of the following: Sn-Pb, Sn-Ag, Sn-Bi, Sn-Zn, Sn-Cu, Pd, Au, and Ag. The depressions are V-shaped, U-shaped, or rectangular. Each depression has a depth which is 30% to 75% with respect to the thickness which the outer lead has at the cut end face of distal end thereof. The outer leads are either a gull-wing type or a straight type.
IT 12668-36-9
(solder; design and fabrication of a semiconductor device having conventional gull-wing and straight outer leads)
RN 12668-36-9 HCAPLUS
CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

IC ICM H01L021-76
ICS H01L029-40
INCL 257692000
CC 76-3 (Electric Phenomena)
IT Electrodeposition
Electronic packages
Semiconductor device fabrication
Soldering
(design and fabrication of a semiconductor device having conventional gull-wing and straight outer leads)
IT Coating process
(dip; design and fabrication of a semiconductor device having conventional gull-wing and straight outer leads)
IT Coating process
(electroless; design and fabrication of a semiconductor device having conventional gull-wing and straight outer leads)
IT 7440-05-3, Palladium, uses 7440-22-4, Silver, uses 7440-57-5, Gold, uses 11110-87-5 11125-88-5 11144-61-9 12668-36-9 12713-30-3
(solder; design and fabrication of a semiconductor device having conventional gull-wing and straight outer leads)
OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

L52 ANSWER 25 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2001:617420 HCAPLUS Full-text
DOCUMENT NUMBER: 135:182470
TITLE: Heat sink
INVENTOR(S): Kawabata, Masaya; Noda, Hajime
PATENT ASSIGNEE(S): Furukawa Electric Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001230357	A	20010824	JP 2000-35274 <--	20000214
PRIORITY APPLN. INFO.:			JP 2000-35274 <--	20000214

ED Entered STN: 24 Aug 2001
AB The title apparatus includes: (a) highly thermal conductive metal baseplate, (b) a solder layer formed in a whole prescribed region on the surface of the above stated baseplate, and (c) metal heat-radiating fins joining with the baseplate by soldering via the solder layer. The highly thermal conductive metal is Cu or Cu alloy, the solder layer is formed from Sn-Zn eutectic solder, and the metal heat-radiating fins are corrugated fins formed from Al or Al alloy. The heat sink can be used for cooling semiconductor devices, etc.
IT 7440-50-8, Copper, uses
(baseplate; heat sink with heat-radiating fins formed on baseplate via solder layer)
RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

Cu

IT 12668-36-9
(layer; heat sink with heat-radiating fins formed on baseplate via solder layer)
RN 12668-36-9 HCAPLUS
CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

IC ICM H01L023-40
ICS F28F021-08; H01L023-373
CC 47-4 (Apparatus and Plant Equipment)
Section cross-reference(s): 56, 76
ST heat sink baseplate solder metal fin; copper alloy baseplate aluminum alloy fin; tin zinc eutectic solder fin soldering; semiconductor device cooling heat sink
IT Metals, uses

(baseplate and fins; heat sink with heat-radiating fins formed on baseplate via solder layer)
IT Semiconductor devices
(cooling of; heat sink with heat-radiating fins formed on baseplate via solder layer for)
IT Heat exchanger fins
Heat sinks
Heat transfer
Soldering
Solders
(heat sink with heat-radiating fins formed on baseplate via solder layer)
IT Cooling
(of semiconductor device; heat sink with heat-radiating fins formed on baseplate via solder layer for)
IT Copper alloy, base
(baseplate; heat sink with heat-radiating fins formed on baseplate via solder layer)
IT Aluminum alloy, base
(fins; heat sink with heat-radiating fins formed on baseplate via solder layer)
IT 7440-50-8, Copper, uses
(baseplate; heat sink with heat-radiating fins formed on baseplate via solder layer)
IT 7429-90-5, Aluminum, uses
(fins; heat sink with heat-radiating fins formed on baseplate via solder layer)
IT 11143-56-9 11149-84-1 12668-36-9 12670-31-4
55929-79-8 73235-25-3
(layer; heat sink with heat-radiating fins formed on baseplate via solder layer)
IT 11125-88-5D, eutectic
(solder; heat sink with heat-radiating fins formed on baseplate via solder layer)

L52 ANSWER 26 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2000:757933 HCAPLUS Full-text
DOCUMENT NUMBER: 134:35756
TITLE: Phase equilibria and the related properties of Sn-Ag-Cu based Pb-free solder alloys
AUTHOR(S): Ohnuma, I.; Miyashita, M.; Anzai, K.; Liu, X. J.; Ohtani, H.; Kainuma, R.; Ishida, K.
CORPORATE SOURCE: Department of Materials Science, Graduate School of Engineering, Tohoku University, Sendai, 980-8579, Japan
SOURCE: Journal of Electronic Materials (2000), 29(10), 1137-1144
CODEN: JECMA5; ISSN: 0361-5235
PUBLISHER: Minerals, Metals & Materials Society
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 29 Oct 2000
AB We have recently developed a thermodn. database for micro- soldering alloys which consists of the elements Pb, Bi, Sn, Sb, Cu, Ag, Zn, and In. In this paper, the phase equilibrium and the related thermodn. properties of the Sn-Ag-Cu base alloys are presented using this database, alloy systems being one of the promising candidates for Pb-free solders. The isothermal section diagrams of the Sn-Ag-Cu ternary system were exptl. determined by SEM-EDS, x-ray diffraction and metallog. techniques. Based on the present results as

well as the previous data on phase boundaries and thermochem. properties, thermodn. assessment of this system was carried out. The isothermal and vertical section diagrams, liquidus surface, mass fractions of the phase constitution, etc., were calculated The predictions of surface energy and viscosity were also investigated. Moreover, a non-equilibrium solidification process using the Scheil model was simulated and compared with the equilibrium solidification behavior in some Sn-Ag-Cu base alloys. Calculated results based on the Scheil model were incorporated into a three-dimensional solidification simulation and the prediction of practical solidification procedures was performed.

IT 12711-88-5
(phase equilibrium and the related properties of Sn-Ag-Cu based Pb-free solder alloys)

RN 12711-88-5 HCAPLUS

CN Copper alloy, base, Cu 0-100,Sn 0-100 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	0 - 100	7440-50-8
Sn	0 - 100	7440-31-5

CC 76-13 (Electric Phenomena)
Section cross-reference(s): 56, 68, 75

IT 11142-90-8 11144-62-0 12711-88-5 111448-90-9, Copper 0-100, silver 0-100, tin 0-100 179921-24-5 311819-20-2, Bismuth 0-12, copper 0-100, silver 0-100, tin 0-100 311819-21-3, Copper 0-100, indium 0-12, silver 0-100, tin 0-100 311819-22-4, Copper 0.7, silver 0.3, tin 99 311819-23-5, Copper 0.57, silver 3.24, tin 96.19
(phase equilibrium and the related properties of Sn-Ag-Cu based Pb-free solder alloys)

OS.CITING REF COUNT: 67 THERE ARE 67 CAPLUS RECORDS THAT CITE THIS RECORD (67 CITINGS)

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 27 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1999:304237 HCAPLUS Full-text

DOCUMENT NUMBER: 130:355523

TITLE: Texture analysis of resistance-pressure-spot-welded bronze and brass alloys

AUTHOR(S): Mozaffari, Hadi; Taffner, Ulrike; Seifert, Hans Jurgen; Aldinger, Fritz

CORPORATE SOURCE: MPI Metallforschung, Stuttgart, Germany

SOURCE: Sonderbaende der Praktischen Metallographie (1998), 29(Fortschritte in der Metallographie), 131-135
CODEN: PMSODC; ISSN: 0343-3579

PUBLISHER: DGM Informationsgesellschaft mbH

DOCUMENT TYPE: Journal

LANGUAGE: German

ED Entered STN: 18 May 1999

AB Two specimen of Cu6Sn bronze and Cu37Zn brass are welded by pressure resistance welding. The welds of a Cu6Sn bronze and a Cu37Zn brass was investigated by several microscopic methods (e.g. light, scanning electron, and transmission electron microscopy, x-ray diffraction, microprobe). The distribution of Cu, Sn, and Zn in the welding zone was determined by the microprobe. The texture anal. of the transcrystn. zone of the welds showed

that it consisted of inhomogeneous α-dendrites and a Sn-rich δ-phase. The mech. properties of the welds were also influenced by the formation of a globulin-like peripheral area.

IT 12682-95-0
(texture anal. of resistance welded bronze and brass alloys)
RN 12682-95-0 HCAPLUS
CN Copper alloy, base, Cu 94,Sn 6 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	94	7440-50-8
Sn	6	7440-31-5

CC 56-9 (Nonferrous Metals and Alloys)
IT Welding of metals
(resistance, pressure; texture anal. of resistance welded bronze and brass alloys)
IT 12621-87-3 12682-95-0
(texture anal. of resistance welded bronze and brass alloys)
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 28 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1998:153668 HCAPLUS Full-text
DOCUMENT NUMBER: 128:220302
ORIGINAL REFERENCE NO.: 128:43593a,43596a
TITLE: Thermodynamic aspect of the wire-bonding process
AUTHOR(S): Falk, J.
CORPORATE SOURCE: Degussa AG, Rheinfelden, Germany
SOURCE: Microelectronics International (1998), 15(1), 23-31
CODEN: MIINF2; ISSN: 1356-5362
PUBLISHER: MCB University Press
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 14 Mar 1998
AB The influence of process heat, with regard to wire- and substrate-materials, on the adhesion of wire-bonds was investigated. Temperature increases up to 200°C were measured on the interface between surface and wire. This temperature is the basis for demonstrating the important influence of dissipated process heat on the cold welding process of wire-bonding. Complementary calcns. to evaluate the equation of thermal conductivity were carried out using the finite element (FE) method. Bonding tests were able to verify the calcns. These thermodynamical considerations give us a new method to optimize the construction and the choice of materials within the wire-bond process.
IT 12682-95-0
(finite element simulation of thermodn. aspects of wire-bonding process of Al wire to Au and Ni coated Cu-6Sn substrate)
RN 12682-95-0 HCAPLUS
CN Copper alloy, base, Cu 94,Sn 6 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	94	7440-50-8
Sn	6	7440-31-5

CC 56-9 (Nonferrous Metals and Alloys)
Section cross-reference(s): 69, 76
IT Wires
(aluminum; finite element simulation of thermodn. aspects of wire-bonding process of Al wire to Au and Ni coated Cu-6Sn substrate)
IT Welding of metals
(diffusion; finite element simulation of thermodn. aspects of wire-bonding process of Al wire to Au and Ni coated Cu-6Sn substrate)
IT Thermodynamics
(finite element simulation of thermodn. aspects of wire-bonding process of Al wire to Au and Ni coated Cu-6Sn substrate)
IT Simulation and Modeling, physicochemical
(finite-element; of thermodn. aspects of wire-bonding process of Al wire to Au and Ni coated Cu-6Sn substrate)
IT 7440-02-0, Nickel, processes 7440-57-5, Gold, processes
(coating; finite element simulation of thermodn. aspects of wire-bonding process of Al wire to Au and Ni coated Cu-6Sn substrate)
IT 12682-95-0
(finite element simulation of thermodn. aspects of wire-bonding process of Al wire to Au and Ni coated Cu-6Sn substrate)
IT 7429-90-5, Aluminum, processes
(wire; finite element simulation of thermodn. aspects of wire-bonding process of Al wire to Au and Ni coated Cu-6Sn substrate)
OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 29 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1997:454213 HCAPLUS Full-text
DOCUMENT NUMBER: 127:124880
ORIGINAL REFERENCE NO.: 127:24025a,24028a
TITLE: Diffusion bonding of Cu-Sn alloys and Al-Sn alloys in air
AUTHOR(S): Ito, Isao; Yamada, Hideaki; Otoguro, Yasuo
CORPORATE SOURCE: Gunma University, Japan
SOURCE: Shindo Gijutsu Kenkyu Kaishi (1996), 35, 126-131
CODEN: SGKEBX; ISSN: 0370-985X
PUBLISHER: Nippon Shindo Kyokai
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
ED Entered STN: 21 Jul 1997
AB Effects of single addition of Sn and combined addition of Sn and other one element (Cu, Mg, Zn, Ti, Bi, Ni) to Al on the diffusion bondability of Cu-3 weight% Sn or Cu-10 weight% Sn alloy and Al alloys in the atmospheric were investigated. Diffusion bondings were carried out at 773 K for 3.6ks and 7.2 ks under the pressure of 2 MPa and 4 MPa. The bonding surfaces were polished with 9 μm diamond powder. Bondability was evaluated by the shear fracture strength. Such intermetallic compds. as γ2, η2 and θ in the phase diagram of Cu and Al, and δ in that of Cu and Sn were formed in all diffusion couples. The compositionally graded diffusion couple, which consisted of one diffusion piece of Cu-Sn alloy changing gradually in concentration of Sn from 3 to 10 weight% and the other of Al-0.5 weight% Sn, was used to judge the

intermetallic compds. of γ2, η2, and θ. The couples of Al and Cu-Sn alloys were not bonded while the couples of Al-Sn alloys and Cu-Sn alloys were bonded. The couples of Al-0.5 weight% Sn containing 1 weight% Ni and both Cu-Sn alloys, which were bonded for 3.6 ks under the pressure of 4 MPa, showed the highest shear fracture strength of about 40 MPa. The fracture occurred along the original bonding interface of joint enclosed by the compound η2 in all diffusion couples. The addnl. element of Sn into Al was concentrated in the phase layer of δ.

IT 11099-34-6 53507-23-6
(diffusion bonding of Cu-Sn alloys and Al-Sn alloys in air)

RN 11099-34-6 HCAPLUS

CN Copper alloy, base, Cu 90,Sn 10 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	90	7440-50-8
Sn	10	7440-31-5

RN 53507-23-6 HCAPLUS

CN Copper alloy, base, Cu 97,Sn 3 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	97	7440-50-8
Sn	3	7440-31-5

CC 56-9 (Nonferrous Metals and Alloys)

IT Welding of metals
(diffusion; diffusion bonding of Cu-Sn alloys and Al-Sn alloys in air)

IT 11099-34-6 53507-23-6 55494-69-4 136102-86-8
136102-87-9 136102-88-0 136102-90-4 136102-91-5 136133-43-2
(diffusion bonding of Cu-Sn alloys and Al-Sn alloys in air)

L52 ANSWER 30 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1997:360965 HCAPLUS Full-text
DOCUMENT NUMBER: 127:21956
ORIGINAL REFERENCE NO.: 127:4257a,4260a
TITLE: Tin or tin alloy plating materials having high solder wettability
INVENTOR(S): Nomura, Yukiya; Miyafuji, Motohisa
PATENT ASSIGNEE(S): Kobe Steel, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09078265	A	19970325	JP 1995-231481 <--	19950908
JP 3049199	B2	20000605		
PRIORITY APPLN. INFO.:			JP 1995-231481 <--	19950908

ED Entered STN: 09 Jun 1997

AB Sn or Sn alloy plated on Cu or Cu alloy is cleaned with an aqueous solution of HF2NH4 having a concentration of 0.5-10 weight% to remove an oxide film present on the surface. The plating is provided on elec. contacts, connectors, terminals, etc.
IT 7440-50-8, Copper, uses 12682-96-1
(tin or tin alloy plating materials having high solder wettability on)
RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

Cu

RN 12682-96-1 HCAPLUS
CN Copper alloy, base, Cu 96,Sn 4 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	96	7440-50-8
Sn	4	7440-31-5

IC ICM C23F001-30
ICS C23G001-02; H01R004-02
CC 56-6 (Nonferrous Metals and Alloys)
IT Soldering
(tin or tin alloy plating materials having high solder wettability on copper or copper alloy)
IT 7440-50-8, Copper, uses 12682-96-1
(tin or tin alloy plating materials having high solder wettability on)

L52 ANSWER 31 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1996:197878 HCAPLUS Full-text
DOCUMENT NUMBER: 124:295811
ORIGINAL REFERENCE NO.: 124:54707a,54710a
TITLE: Effect of surfacing on the quality of CuSn 6 bronze layers
AUTHOR(S): Haduch, Jerzy
CORPORATE SOURCE: Miedzyresortowe Centrum Naukowe Eksploatacij Majatku Trwalego, Radom, Pol.
SOURCE: Przeglad Spawalnictwa (1996), 48(1-2), 16-19
CODEN: PRZAA3; ISSN: 0033-2364
PUBLISHER: Agenda Wydawnicza SIMP
DOCUMENT TYPE: Journal
LANGUAGE: Polish
ED Entered STN: 06 Apr 1996
AB Intermittent-arc surfacing with bronze on the 6-mm thick steel plate was performed. The hardness of the hard face was analyzed.
IT 12682-95-0
(effect of surfacing on quality of Cu-Sn bronze layers)
RN 12682-95-0 HCAPLUS
CN Copper alloy, base, Cu 94,Sn 6 (CA INDEX NAME)

Component	Component Percent	Component Registry Number

Component	Component Percent	Component Registry Number
Cu	94	7440-50-8
Sn	6	7440-31-5

CC 56-6 (Nonferrous Metals and Alloys)
IT Welding
(effect of surfacing on quality of Cu-Sn bronze layers)
IT 12682-95-0 54297-28-8, St3S, processes
(effect of surfacing on quality of Cu-Sn bronze layers)

L52 ANSWER 32 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1995:780739 HCAPLUS Full-text
DOCUMENT NUMBER: 123:176078
ORIGINAL REFERENCE NO.: 123:31251a,31254a
TITLE: Copper alloys for electrodes in spot welding of steel parts precoated with chromium
INVENTOR(S): Yoshida, Mitsuo; Morita, Junichi
PATENT ASSIGNEE(S): Shinnippon Seitetsu KK, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07164163	A	19950627	JP 1993-340938 <--	19931210
PRIORITY APPLN. INFO.:			JP 1993-340938 <--	19931210

ED Entered STN: 08 Sep 1995
AB The Cu-alloy electrodes have surface Vickers microhardness ≥150 but <300. The overlapping steel sheets precoated with Cr and overcoated with Cr oxides are welded with adjusting the width of flat electrode contact zone to 1-3 times the lapped width of the steel sheets. The welding process gives low contact resistivity between the electrodes and sheets, and permits wide range of elec. current for welding without a fume discharge.
IT 7440-50-8, Copper, processes 58250-55-8
(welding electrode; copper alloy electrodes for seam welding of steel sheets precoated with chromium)
RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

Cu

RN 58250-55-8 HCAPLUS
CN Copper alloy, base, Cu 96,Sn 4.5 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	96	7440-50-8
Sn	4.5	7440-31-5

IC ICM B23K011-30

ICS B23K011-08; B23K011-16; B23K035-30; C25D011-38
CC 55-9 (Ferrous Metals and Alloys)
ST electrode seam welding chromium coated steel
IT Welding
(seam; copper alloy electrodes for seam welding of steel sheets precoated with chromium)
IT Copper alloy, base
(electrodes; copper alloy electrodes for seam welding of steel sheets precoated with chromium)
IT 12597-69-2, Steel, processes
(chromium-coated; copper alloy electrodes for seam welding of steel sheets precoated with chromium)
IT 7440-47-3, Chromium, processes
(coating, steel sheets with; copper alloy electrodes for seam welding of steel sheets precoated with chromium)
IT 1333-82-0, Chromium oxide (CrO3)
(coating, steel sheets with; copper alloy electrodes for seam welding of steel sheets precoated with chromium)
IT 7440-50-8, Copper, processes 11123-03-8 11145-98-5 12620-49-4 12665-54-2 12682-28-9 39418-32-1 58250-55-8 130863-37-5 167636-66-0 167636-67-1 167636-68-2 167636-69-3
(welding electrode; copper alloy electrodes for seam welding of steel sheets precoated with chromium)

L52 ANSWER 33 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1991:233233 HCAPLUS Full-text
DOCUMENT NUMBER: 114:233233
ORIGINAL REFERENCE NO.: 114:39281a
TITLE: Copper alloys for electric lead frames suitable for soldering
INVENTOR(S): So, Hidehiko
PATENT ASSIGNEE(S): Nippon Mining Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02141562	A	19900530	JP 1988-293651 <--	19881122
PRIORITY APPLN. INFO.:			JP 1988-293651 <--	19881122

ED Entered STN: 15 Jun 1991
AB The dilute Cu alloys contain Sn 0.1-3.0, P 0.01-0.10, and optionally Be, Mg, Al, Si, Ti, Cr, Mn, Fe, Co, Ni, Zn, Pb, Ag, and/or Zr 0.001-3.0%. The alloy strip is finish rolled and stress-relief annealed in a nonoxidizing or reducing atmospheric to give a product for manufacture of elec. lead frames and similar parts suitable for tinning or soldering.
IT 12687-16-0 51880-71-8 123774-03-8
(for elec. lead frames, with stress relief for tinning and soldering)
RN 12687-16-0 HCAPLUS
CN Copper alloy, base, Cu 98,Sn 2 (CA INDEX NAME)

Component Component Component

	Percent	Registry Number
Cu	98	7440-50-8
Sn	2	7440-31-5

RN 51880-71-8 HCAPLUS
CN Copper alloy, base, Cu 98,Sn 2.5 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	98	7440-50-8
Sn	2.5	7440-31-5

RN 123774-03-8 HCAPLUS
CN Copper alloy, base, Cu 99,Sn 1.2 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	99	7440-50-8
Sn	1.2	7440-31-5

IC ICM C22F001-08
ICS H01B001-02; H01L023-48
ICA C22C009-02
CC 56-3 (Nonferrous Metals and Alloys)
Section cross-reference(s): 76
ST copper alloy lead frame soldering; elec lead frame copper alloy; formability copper alloy strip
IT Electric conductors
(lead frames, copper alloys for, stress-relief annealed strip for tinning and soldering of)
IT 12687-16-0 51880-71-8 123774-03-8
134006-48-7 134006-49-8 134006-50-1 134006-51-2 134006-52-3
134006-53-4
(for elec. lead frames, with stress relief for tinning and soldering)

L52 ANSWER 34 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1990:486558 HCAPLUS Full-text
DOCUMENT NUMBER: 113:86558
ORIGINAL REFERENCE NO.: 113:14455a,14458a
TITLE: The vacuum system of the HERA electron storage ring
AUTHOR(S): Ballion, R.; Boster, J.; Giesske, W.; Hartwig, H.; Jagnow, D.; Kose, R.; Kouptsidis, J.; Schumann, G.; Schwartz, M.
CORPORATE SOURCE: DESY, Hamburg, D-2000, Germany
SOURCE: Particle Accelerators (1990), 29(1-4), 145-52
CODEN: PLACBD; ISSN: 0031-2460
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 01 Sep 1990
AB The 6.3 km long vacuum system of the HERA e ring is fabricated by brazing tubes made from the Cu bronze containing 2% Sn. This Cu alloy absorbs synchrotron light more efficiently than Al and therefore reduces radiation shielding problems. The system is mainly pumped by integrated sputter-ion pumps using the fields of the dipole and quadrupole magnets. They provide a

maximum linear pumping speed of 30 L/s per m. The impedance of the beam environment is kept small by minimizing the dimensions of the pump slots and avoiding steps of >1 mm inside the vacuum chamger. A vacuum pressure in the 1--9 mbar range was achieved some days after assembly of the vacuum system and without bake out in-situ. A beam life time of >1 h was observed during the first test runs of HERA.

IT 12687-16-0
(electron storage ring vacuum chamber main beam tube and pump channel of)
RN 12687-16-0 HCAPLUS
CN Copper alloy, base, Cu 98,Sn 2 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	98	7440-50-8
Sn	2	7440-31-5

IT 7440-50-8, Copper, uses and miscellaneous
(vacuum chamber water cooling tubes of oxygen free, of electron storage ring)
RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

Cu

CC 71-1 (Nuclear Technology)
IT Soldering
(brazing, of electron storage ring vacuum system components)
IT 12687-16-0
(electron storage ring vacuum chamber main beam tube and pump channel of)
IT 7440-50-8, Copper, uses and miscellaneous
(vacuum chamber water cooling tubes of oxygen free, of electron storage ring)
OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L52 ANSWER 35 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1989:43149 HCAPLUS Full-text
DOCUMENT NUMBER: 110:43149
ORIGINAL REFERENCE NO.: 110:7111a,7114a
TITLE: Friction welding of incompatible materials
AUTHOR(S): Sassani, F.; Neelam, J. R.
CORPORATE SOURCE: Dep. Mech. Eng., Univ. British Columbia, Vancouver, BC, Can.
SOURCE: Welding Journal (Miami, FL, United States) (1988), 67(11), 264s-270s
CODEN: WEJUA3; ISSN: 0043-2296
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 04 Feb 1989
AB A modified method for friction welding of incompatible metals and alloys was investigated. Friction welding of brass to Cu, bronze to steel, and Ti to Ni with different interlayes was performed, and varying degrees of success and mech. joint strengths were observed Metallurgical analyses and observations of

the extent of metal bonding and diffusion showed that incompatible metals are friction welded with an interlayer, and mech. improved joints are obtained.

IT 11099-34-6
(friction welding of, to steel with copper interlayer)
RN 11099-34-6 HCAPLUS
CN Copper alloy, base, Cu 90,Sn 10 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	90	7440-50-8
Sn	10	7440-31-5

IT 7440-50-8, Copper, properties
(friction welding of, to yellow brass with naval brass interlayer)
RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

Cu

CC 56-9 (Nonferrous Metals and Alloys)
IT Welding
(friction, of incompatible metals and alloys with metal interlayer)
IT 11099-34-6
(friction welding of, to steel with copper interlayer)
IT 7440-50-8, Copper, properties
(friction welding of, to yellow brass with naval brass interlayer)
OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

L52 ANSWER 36 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1987:482343 HCAPLUS Full-text
DOCUMENT NUMBER: 107:82343
ORIGINAL REFERENCE NO.: 107:13459a,13462a
TITLE: High-strength copper alloy for conducting springs
INVENTOR(S): So, Hidehiko; Tsuji, Masahiro
PATENT ASSIGNEE(S): Nippon Mining Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62083443	A	19870416	JP 1985-223682 <--	19851009
PRIORITY APPLN. INFO.:			JP 1985-223682 <--	19851009

ED Entered STN: 05 Sep 1987
AB The Cu alloy having good elec. conductivity contains Sn 0.8-2, P 0.005-0.08, Mn 0.05-0.2, and optionally 0.05-1% of Ni with Al, Be, Co, Cr, Fe, Hg, In, Mo, Mg, Pb, Si, Te, Ti, Zn, and/or Zr each. Thus, a strip 0.8 mm thick of Cu alloy containing Sn 1.25, P 0.05, and Mn 0.18% was coated with 5μ Sn-40% Pb solder by dipping into melt for 5 s. The coated strip was heated at 150°, and

tested in bending through 90° angle with straightening every 100 h. No peeling of the solder layer was observed in 2000 h. A similarly coated strip of Cu alloy containing 1.25% Sn, 0.04% P, and no Mn failed the test in 1300 h.
IT 12687-16-0
(solderability of, for elec. conducting springs)
RN 12687-16-0 HCAPLUS
CN Copper alloy, base, Cu 98,Sn 2 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	98	7440-50-8
Sn	2	7440-31-5

IC ICM C22C009-02
ICA H01B001-02; H01L023-48
CC 56-3 (Nonferrous Metals and Alloys)
Section cross-reference(s): 76
IT Soldering
(of copper-tin dilute alloys, for elec. conducting springs)
IT 12687-16-0 109952-08-1 109952-17-2 109952-18-3
109952-19-4 109952-20-7 109952-21-8 109952-22-9 109952-23-0
109952-24-1 109952-25-2 109952-26-3 109952-27-4 109952-28-5
109952-29-6 109952-30-9 109952-31-0
(solderability of, for elec. conducting springs)

L52 ANSWER 37 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1987:469246 HCAPLUS Full-text
DOCUMENT NUMBER: 107:69246
ORIGINAL REFERENCE NO.: 107:11269a,11272a
TITLE: Compound superconducting wires
INVENTOR(S): Kono, Tsukasa; Ikeno, Yoshimitsu; Sugimoto, Masaru
PATENT ASSIGNEE(S): Fujikura Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62067155	A	19870326	JP 1985-205578 <--	19850918
PRIORITY APPLN. INFO.:			JP 1985-205578 <--	19850918

ED Entered STN: 21 Aug 1987
AB In forming a compound (e.g., Nb3Sn) super conductor wire by thermal diffusion processing, a 1st tape comprising ≥1 element(s) (e.g., bronze), which are part of the elements constituting the superconductor, is wrapped around a rod comprising the rest of the elements (e.g., Nb) constituting the superconductor, a 2nd tape comprising the same elements as those of the rod is wrapped around the rod, a 3rd (cover) tape is wrapped around the 2nd tape, and the ends of the 2nd tape are welded together.
IT 11099-35-7
(tapes from, formation of superconductor wires using)
RN 11099-35-7 HCAPLUS
CN Copper alloy, base, Cu 88,Sn 12 (CA INDEX NAME)

Component Component Component

	Percent	Registry Number
Cu	88	7440-50-8
Sn	12	7440-31-5

IC ICM C22F001-00
ICS H01B013-00
CC 76-4 (Electric Phenomena)
IT Welding
(superconductor wire formation by)
IT 7440-03-1, Niobium, uses and miscellaneous 11099-35-7
12605-80-0
(tapes from, formation of superconductor wires using)

L52 ANSWER 38 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1987:54519 HCAPLUS Full-text
DOCUMENT NUMBER: 106:54519
ORIGINAL REFERENCE NO.: 106:8959a,8962a
TITLE: Manufacture of superconductor
INVENTOR(S): Suzuki, Hidemoto; Ichihara, Masamitsu; Kamisada, Yoshimasa; Aoki, Nobuo; Kumano, Tomoyuki
PATENT ASSIGNEE(S): Showa Electric Wire and Cable Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 61136663	A	19860624	JP 1984-259001	19841207
PRIORITY APPLN. INFO.:			JP 1984-259001	19841207

ED Entered STN: 21 Feb 1987
AB Composite-reinforced superconductors suitable for electromagnets are manufactured with a rectangular cross-section by: (1) wrapping the core (such as a stainless steel, Mo, or W wire surrounded by Nb wires in a Cu-Sn alloy matrix) in a longitudinal direction, especially with a Cu or Al strip; (2) welding the strip seams; (3) rolling to remove porosity; (4) optionally annealing; and (5) stretching (especially swaging) for >80% reduction into a rectangular shape. Resulting superconductor can be made longer than that made by conventional methods. Thus, stainless steel wire (2.6 mm diameter) was wrapped with composite wire having Nb fibers in Cu-Sn alloy matrix (2.6 mm diameter), wrapped with Cu tape, welded shut, rolled to 9 mm diameter, cold-worked to 5 mm diameter, annealed at 500° for 1 h, and cold-worked into a composite wire having 3.5 + 5 mm cross-section.
IT 12668-36-9P
(composite, manufacture of, for superconductor cables)
RN 12668-36-9 HCAPLUS
CN Copper alloy, nonbase, Cu,Sn (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Sn	7440-31-5

IT 7439-98-7P, Molybdenum, preparation 7440-50-8P, Copper, uses and miscellaneous

(superconductor core, manufacture of)
RN 7439-98-7 HCAPLUS
CN Molybdenum (CA INDEX NAME)

Mo

RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

Cu

IC ICM C22F001-00
ICS H01B013-00
ICA H01B012-02; H01F005-08
CC 56-11 (Nonferrous Metals and Alloys)
Section cross-reference(s): 76
IT 12668-36-9P
(composite, manufacture of, for superconductor cables)
IT 7439-98-7P, Molybdenum, preparation 7440-33-7P, Tungsten, preparation 7440-50-8P, Copper, uses and miscellaneous 12597-68-1P, Stainless steel, preparation
(superconductor core, manufacture of)

L52 ANSWER 39 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1986:557233 HCAPLUS Full-text
DOCUMENT NUMBER: 105:157233
ORIGINAL REFERENCE NO.: 105:25299a,25302a
TITLE: Copper and nickel alloys clad with platinum and its alloys. Joining techniques and mechanical properties
AUTHOR(S): Ott, D.; Raub, C. J.
CORPORATE SOURCE: Forschungsinst. Edelmet. Metallchem., Schwaebisch Gmuend, Fed. Rep. Ger.
SOURCE: Platinum Metals Review (1986), 30(3), 132-40
CODEN: PTMRA3; ISSN: 0032-1400
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 01 Nov 1986
AB The joining and the mech. properties of joints of Cu (99.9%) and various Cu alloys clad with Pt (99.99) and Pt-5Co [103705-33-5] and Pt-5Ir [54658-87-6] were studied, based on the Vickers hardness-deformation degree and hardness-temperature curves. The Cu alloys were Cu-(6-8)Sn [104570-60-7] and Cu-(10-40)%Ni [12757-27-6], including Ni electroplate on Cu. The deformation characteristics of the Pt and Pt alloys were assessed at 600-900°, which is the critical range of welding temperature The most convenient cladding was achieved by hot pressing at 700°, 20 min, and by 7 kN, as compared to cold or hot rolling, and composite casting of the lower m.p. substrate onto the Pt surface. The Cu-Ni alloys were more suitable for clad substrates than the other alloys, including pure Cu.
IT 104570-60-7 7440-50-8, uses and miscellaneous
(cladding of, with platinum and platinum alloys by hot pressing,

mech. properties in relation to)
RN 104570-60-7 HCAPLUS
CN Copper alloy, base, Cu 92-94,Sn 6-8 (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	92 - 94	7440-50-8
Sn	6 - 8	7440-31-5

RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

Cu

CC 56-9 (Nonferrous Metals and Alloys)
Section cross-reference(s): 57, 76
IT 104570-60-7 7440-50-8, uses and miscellaneous
12757-27-6
(cladding of, with platinum and platinum alloys by hot pressing, mech. properties in relation to)

L52 ANSWER 40 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1986:519375 HCAPLUS Full-text
DOCUMENT NUMBER: 105:119375
ORIGINAL REFERENCE NO.: 105:19265a,19268a
TITLE: Layered electric contacts
INVENTOR(S): Yamaguchi, Kenji; Sanki, Sadahiko
PATENT ASSIGNEE(S): Hitachi Cable, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 61073889	A	19860416	JP 1984-195714 <--	19840920
PRIORITY APPLN. INFO.:			JP 1984-195714 <--	19840920

ED Entered STN: 03 Oct 1986
AB A steel or alloy surface is clad with Cu or its alloy by rolling, and a portion is masked to remove the clad metal and manufacture elec. contacts. Thus, Cu ribbon 10μ thick was press-bonded on 1 side of 0.25 mm thick strip of Fe-42% Ni alloy. The Ag braze was press-bonded on the other side, and both sides were masked with a plastic tape. The sheet was chemical etched in an NH4OH-H2O2 solution to remove Cu and Ag layers. The method produced dimensionally correct products.
IT 12621-73-7
(vapor deposition of, on alloy for elec. contacts, masking and etching in)
RN 12621-73-7 HCAPLUS
CN Copper alloy, base, Cu 99,Sn 1 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	99	7440-50-8
Sn	1	7440-31-5

IC ICM C23F001-00
ICS B23K020-00
CC 56-9 (Nonferrous Metals and Alloys)
Section cross-reference(s): 76
IT Soldering
(brazing, with silver alloy, on steel, for elec. contacts by masking and etching)
IT 12621-73-7
(vapor deposition of, on alloy for elec. contacts, masking and etching in)

L52 ANSWER 41 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1986:93586 HCAPLUS Full-text
DOCUMENT NUMBER: 104:93586
ORIGINAL REFERENCE NO.: 104:14773a,14776a
TITLE: Cavitation resistance of bronzes for surfacing of the most loaded components of friction pairs of hydroelectric power plants
AUTHOR(S): Darchiashvili, G. I.
CORPORATE SOURCE: USSR
SOURCE: Nov. Protsessy Naplavki, Svoistva Naplavlennogo Met. Perekhodnoi Zony (1984), 104-8. Editor(s): Gladkii, P. V. Akad. Nauk Ukr. SSR, Inst. Elektrosvarki: Kiev, USSR. CODEN: 54FJA9
DOCUMENT TYPE: Conference
LANGUAGE: Russian
ED Entered STN: 22 Mar 1986
AB The cavitation resistance of standard and exptl. Sn bronzes addnl. alloyed with rare-earth metals was studied to select the most appropriate material for surfacing highly loaded friction parts operating in conditions of hydrodynamic cavitation of a working fluid. At hydraulic fluid temperature 80° during 7 h testing, the exptl. bronze Br4 had the highest cavitation resistance. Spectrograms of wear surfaces of Br4 and standard bronze BrOS10-10 showed significant amts. of Cu and Sn in wear products. At >75% Sn, ppts. of a brittle δ-phase were observed; they constituted the initial sources of fatigue rupture. The addition of Ce hampered the harmful effect of the brittle phase, decreased Cu and Sn concns. in wear products, and improved cavitation resistance.
IT 70331-63-4
(for surfacing of loaded friction pairs of hydroelec. power units, hydrodynamic cavitation of)
RN 70331-63-4 HCAPLUS
CN Copper alloy, base, Cu,Sn (Br3) (9CI) (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	97	7440-50-8
Sn	3.2	7440-31-5

CC 56-10 (Nonferrous Metals and Alloys)
IT Welding
(surfacing, of loaded friction pairs of hydroelec. power units, tin

bronzes for, hydrodynamic cavitation of)
IT 12675-87-5 12773-58-9 12773-99-8 57621-45-1 65107-57-5
70331-63-4 100438-40-2 100438-41-3 100438-42-4
100438-43-5 100438-44-6 101179-70-8
(for surfacing of loaded friction pairs of hydroelec. power units, hydrodynamic cavitation of)

L52 ANSWER 42 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1983:598818 HCAPLUS Full-text
DOCUMENT NUMBER: 99:198818
ORIGINAL REFERENCE NO.: 99:30559a,30562a
TITLE: Cracking caused by copper during the welding of steel
AUTHOR(S): Kapteijn, J.
CORPORATE SOURCE: Lab. Metalkd., Delft, Neth.
SOURCE: Lastechniek (1983), 49(7), 124-8
CODEN: LASTAW; ISSN: 0023-8694
DOCUMENT TYPE: Journal
LANGUAGE: Dutch
ED Entered STN: 12 May 1984
AB During the welding of steel the cracking can be caused by contaminating Cu, which in molten state ≥1083° penetrates the welded metal along grain boundaries. If enough O is present the solid, nonpenetrating CuO is formed. Expts. are described showing that the alloying of Cu with Al or Si accelerates the oxidation and thus gives greater crack resistance. Cracking may occur also by welding with other metals (e.g., some alloys of Co and of Al). At ≥750° Zn causes cracks during the welding of austenitic stainless steel.
IT 7440-50-8P, uses and miscellaneous
(in welding of steel, crack formation by molten, oxidation effect on)
RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

IT 12793-09-8
(welding of steel by, crack formation during, oxidation effect on)
RN 12793-09-8 HCAPLUS
CN Copper alloy, base, Cu 92,Sn 8 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	92	7440-50-8
Sn	8	7440-31-5

CC 55-9 (Ferrous Metals and Alloys)
IT Welding
(of steel, crack formation in, copper effect on)
IT 7440-50-8P, uses and miscellaneous
(in welding of steel, crack formation by molten, oxidation effect on)
IT 11101-23-8 11133-99-6 12773-58-9 12793-09-8
39398-46-4 73323-16-7 87809-82-3 87809-83-4 87809-84-5
87809-85-6
(welding of steel by, crack formation during, oxidation effect on)

L52 ANSWER 43 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1982:447939 HCAPLUS Full-text
DOCUMENT NUMBER: 97:47939
ORIGINAL REFERENCE NO.: 97:7943a,7946a
TITLE: Ultrasonic welding of oxidized silver cadmium oxide (AgCdO) contact parts
AUTHOR(S): Wodara, Johannes; Sporkenbach, Detlev
CORPORATE SOURCE: Tech. Hochsch. Magdeburg, Magdeburg, Ger. Dem. Rep.
SOURCE: ZIS Mitteilungen (1982), 24(4), 407-13
CODEN: ZISMAH; ISSN: 0044-1465
DOCUMENT TYPE: Journal
LANGUAGE: German
ED Entered STN: 12 May 1984
AB The ultrasonic welding of Ag 10 CdO and Ag-10CdO-Co contacts to Cu, Al, Cu-37 Zn, Cu-6Sn, and Cu-coated steel with intermediate foils of Ag, Al, and Cu and powders of Al, Al2O3, and W carbide was studied. The strongest welding of contacts was obtained with an Al powder intermediate.
IT 7440-50-8, uses and miscellaneous 12682-95-0
(ultrasonic welding of cadmium oxide-silver contacts to)
RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

RN 12682-95-0 HCAPLUS
CN Copper alloy, base, Cu 94,Sn 6 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	94	7440-50-8
Sn	6	7440-31-5

CC 76-2 (Electric Phenomena)
ST ultrasonic welding contact silver cadmium oxide
IT Process optimization
(of ultrasonic welding of silver-cadmium oxide contacts)
IT Electric contacts
(silver cadmium oxide, ultrasonic welding of)
IT Welding
(ultrasonic, of silver cadmium oxide contacts)
IT 11144-41-5
(ultrasonic welding of)
IT 7440-22-4, uses and miscellaneous
(ultrasonic welding of cadmium oxide-silver contact with intermediate foil of)
IT 7440-48-4, uses and miscellaneous
(ultrasonic welding of cadmium oxide-silver contacts containing)
IT 7429-90-5, uses and miscellaneous 7440-50-8, uses and miscellaneous 12597-69-2, uses and miscellaneous 12621-87-3 12682-95-0
(ultrasonic welding of cadmium oxide-silver contacts to)
IT 7429-90-5, uses and miscellaneous 12070-12-1
(ultrasonic welding of cadmium oxide-silver contacts with

intermediate powder of)

L52 ANSWER 44 OF 44 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1981:507432 HCAPLUS Full-text
DOCUMENT NUMBER: 95:107432
ORIGINAL REFERENCE NO.: 95:17859a,17862a
TITLE: Aluminum alloy for a power- and/or form-determined joining technique
INVENTOR(S): Scheel, Wolfgang; Albrecht, Juergen; Heymann, Guenter
PATENT ASSIGNEE(S): Ger. Dem. Rep.
SOURCE: Ger. (East), 8 pp.
CODEN: GEXXA8
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DD 147289	A1	19810325	DD 1979-216724 <--	19791107
PRIORITY APPLN. INFO.:			DD 1979-216724 <--	A1 19791107

ED Entered STN: 12 May 1984
AB A joining alloy for linking up Cu alloy contacts and Cu wires so that they are strong with long lifetimes consists of Al-Cu-Si, especially Al-4Cu-Si. Thus, a Cu wire was welded to a Cu-6 Sn contact by a join of Al-4Cu-Si.
IT 12682-95-0
(aluminum-copper-silicon joining alloy for welding of copper wires to)
RN 12682-95-0 HCAPLUS
CN Copper alloy, base, Cu 94,Sn 6 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Cu	94	7440-50-8
Sn	6	7440-31-5

IT 7440-50-8, uses and miscellaneous
(welding of, to copper based alloys, aluminum-copper-silicon alloy for)
RN 7440-50-8 HCAPLUS
CN Copper (CA INDEX NAME)

IC H01B001-02
CC 76-14 (Electric Phenomena)
IT Electric conductors
(copper wires, aluminum-copper-silicon joiner for welding of, to copper alloys)
IT Welding
(of copper and copper alloy contacts, aluminum-copper-silicon alloy joiner for)

IT Copper alloy, base
(aluminum-copper-silicon joining alloy for welding of copper wires to)
IT 12682-95-0
(aluminum-copper-silicon joining alloy for welding of copper wires to)
IT 37254-60-7
(joining material, for welding of copper wires to copper alloys)
IT 71789-32-7
(joining material, for welding of copper wires to copper-tin alloy)
IT 7440-50-8, uses and miscellaneous
(welding of, to copper based alloys, aluminum-copper-silicon alloy for)

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     (FILE 'HOME' ENTERED AT 12:25:51 ON 18 MAY 2010)

     FILE 'HCAPLUS' ENTERED AT 12:25:57 ON 18 MAY 2010
L1             1 SEA SPE=ON  ABB=ON  PLU=ON  US20060244125/PN
                 SEL RN

     FILE 'REGISTRY' ENTERED AT 12:26:19 ON 18 MAY 2010
L2             1 SEA SPE=ON  ABB=ON  PLU=ON  7439-98-7/RN
L3             1 SEA SPE=ON  ABB=ON  PLU=ON  7440-50-8/RN
L4             1 SEA SPE=ON  ABB=ON  PLU=ON  12668-36-9/RN
                 E CU.SN/MF
L5           761 SEA SPE=ON  ABB=ON  PLU=ON  CU.SN/MF
L6           761 SEA SPE=ON  ABB=ON  PLU=ON  L5 AND 1-13/SN
L7           327 SEA SPE=ON  ABB=ON  PLU=ON  L5 AND 1-13 SN/MAC

     FILE 'HCAPLUS' ENTERED AT 13:14:17 ON 18 MAY 2010
L8          1690 SEA SPE=ON  ABB=ON  PLU=ON  L7
L9        140963 SEA SPE=ON  ABB=ON  PLU=ON  L2
L10       628571 SEA SPE=ON  ABB=ON  PLU=ON  L3
L11            QUE SPE=ON  ABB=ON  PLU=ON  SOLDERING? OR WELDING? OR
                 BRAZING?
L12           71 SEA SPE=ON  ABB=ON  PLU=ON  L8 AND L11
L13           56 SEA SPE=ON  ABB=ON  PLU=ON  L12 AND (1840-2005)/PRY,AY,PY
L14         2129 SEA SPE=ON  ABB=ON  PLU=ON  L4
L15          193 SEA SPE=ON  ABB=ON  PLU=ON  L14 AND L11
L16            5 SEA SPE=ON  ABB=ON  PLU=ON  L15 AND L9 AND L10
                 E  ELECTRONIC PACKAGES/CT
L17        20277 SEA SPE=ON  ABB=ON  PLU=ON  "ELECTRONIC PACKAGES"+PFT,NT/CT
                 E HEAT SINKS/CT
L18         6960 SEA SPE=ON  ABB=ON  PLU=ON  "HEAT SINKS"+PFT,NT/CT
L19            1 SEA SPE=ON  ABB=ON  PLU=ON  L13 AND (L17 OR L18)
L20            0 SEA SPE=ON  ABB=ON  PLU=ON  L13 AND HEAT SINK?
L21            1 SEA SPE=ON  ABB=ON  PLU=ON  L13 AND ELECTRONIC PACKAG?
L22              QUE SPE=ON  ABB=ON  PLU=ON  FILM? OR THINFILM? OR LAYER?
                 OR OVERLAY? OR OVERLAID? OR LAMIN? OR LAMEL? OR (MULTILAYER
                 ?) OR SHEET? OR LEAF? OR FOIL? OR COAT? OR TOPCOAT? OR
                 OVERCOAT? OR VENEER? OR SHEATH? OR COVER? OR ENVELOP? OR
                 ENCAS? OR ENWRAP? OR OVERSPREAD?
L23           28 SEA SPE=ON  ABB=ON  PLU=ON  L13 AND L22
L24           61 SEA SPE=ON  ABB=ON  PLU=ON  L13 OR L16 OR (L19 OR L20 OR
                 L21) OR L23
L25           15 SEA SPE=ON  ABB=ON  PLU=ON  L24 AND ELECTRIC?/SC,SX
L26          127 SEA SPE=ON  ABB=ON  PLU=ON  L15 AND L22
L27           82 SEA SPE=ON  ABB=ON  PLU=ON  L26 AND (1840-2005)/PRY,AY,PY
L28           60 SEA SPE=ON  ABB=ON  PLU=ON  L27 AND ELECTRIC?/SC,SX
L29           60 SEA SPE=ON  ABB=ON  PLU=ON  L28 AND L22
L30           15 SEA SPE=ON  ABB=ON  PLU=ON  L29 AND (L17 OR L18)
L31            3 SEA SPE=ON  ABB=ON  PLU=ON  L30 AND HEAT SINK?
L32           15 SEA SPE=ON  ABB=ON  PLU=ON  (L30 OR L31)
L33           29 SEA SPE=ON  ABB=ON  PLU=ON  L25 OR L32
L34            1 SEA SPE=ON  ABB=ON  PLU=ON  L33 AND L1
L35            0 SEA SPE=ON  ABB=ON  PLU=ON  L8 AND L17 AND L18
L36            4 SEA SPE=ON  ABB=ON  PLU=ON  L8 AND (L17 OR L18)
                 E SOLDERING/CT
L37        20970 SEA SPE=ON  ABB=ON  PLU=ON  SOLDERING+PFT,NT/CT
L38           15 SEA SPE=ON  ABB=ON  PLU=ON  L8 AND L37
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                E WELDING/CT
L39         82910 SEA SPE=ON  ABB=ON  PLU=ON  WELDING+PFT,NT/CT
L40            27 SEA SPE=ON  ABB=ON  PLU=ON  L8 AND L39
L41            42 SEA SPE=ON  ABB=ON  PLU=ON  L38 OR L40
L42            35 SEA SPE=ON  ABB=ON  PLU=ON  L41 AND (1840-2005)/PRY,AY,PY
L43             7 SEA SPE=ON  ABB=ON  PLU=ON  L42 AND ELECTRIC?/SC,SX
L44            29 SEA SPE=ON  ABB=ON  PLU=ON  L33 OR L43
L45             1 SEA SPE=ON  ABB=ON  PLU=ON  L42 AND ELECTRONIC(2A)PACKAG?
L46            29 SEA SPE=ON  ABB=ON  PLU=ON  L44 OR L45
L47            19 SEA SPE=ON  ABB=ON  PLU=ON  L42 AND PROC/RL
L48            44 SEA SPE=ON  ABB=ON  PLU=ON  L46 OR L47
L49            31 SEA SPE=ON  ABB=ON  PLU=ON  L48 AND L22
L50            44 SEA SPE=ON  ABB=ON  PLU=ON  L48 OR L49
L51            23 SEA SPE=ON  ABB=ON  PLU=ON  L50 AND (L9 OR L10)
L52            44 SEA SPE=ON  ABB=ON  PLU=ON  L50 OR L51
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